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RELEASE FORM

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THE ACQUISITION OF NOMINAL MORPHOLOGICAL ENDINGS
IN
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THE ACQUISITION OF NOMINAL MORPHOLOGICAL ENDINGS IN UKRAINIAN IMMERSION

by

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Acquisition of Nominal Morphological Endings in Ukrainian Immersion" submitted by John Sokolowski in partial fulfilment of the requirements for the degree of Master of Education.

Стефанові

ABSTRACT

The purpose of this study is to add to our knowledge of child language acquisition by testing certain hypotheses about the acquisition of selected Ukrainian morphological endings by children in the English-Ukrainian Bilingual Program (early partial immersion). The subjects of the study are immersion pupils (kindergarten to grade seven) and one parent of each pupil.

The results of the study indicate that child performance on all oblique cases is too poor either to confirm or refute the hypotheses proposed for the acquisition of oblique (non-nominative) cases. The data do, however, confirm the hypothesis that the masculine-feminine -*y* nominative plural marker is generalized in Ukrainian acquisition.

A comparison of child performance and adult performance on the cases tested shows that despite large differences between child and adult scores, there is a significant correlation (r=.82, p .01) in the rank order of difficulty for the two groups.

The study calls into question Slobin's explanation that the Russian masculine-neuter -*om* instrumental ending is generalized in Russian language acquisition because it is functionally more unique than the feminine ending -*oj*. This study indicates that -*om* is more salient in Ukrainian

as well, although the Ukrainian feminine instrumental ending -oju is equally unique in function and occurs more frequently.

Finally, the lack of improvement in performance on the oblique cases over grades suggests that a non-standard or pidginized Ukrainian may be developing in the Ukrainian immersion classroom.

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

Background to the Study

The last fifteen years have seen an expansion of second language immersion programs in Canada beginning with the implementation of the now famous St. Lambert experiment in 1965 (Lambert and Tucker 1972). In Alberta this movement has extended beyond the establishment of French immersion classes to the establishment of immersion programs in Ukrainian, Hebrew, German and Cree. One of these programs, the English-Ukrainian Bilingual Program, an early partial immersion program in which English and Ukrainian are used equally as languages of instruction, was implemented in the Edmonton Catholic and Edmonton Public school systems in the fall of 1974. By the fall of 1981 the program had reached grade eight.

While evaluation and documentation of French language immersion programs has been extensive, especially in Eastern Canada (Lambert and Tucker 1973, Bruck et al. 1974, McInnis and Donoghue 1976 and 1977, Swain and Lapkin 1981), evaluation of Ukrainian immersion has been more limited (Muller et al. 1977, Lamont et al. 1978, Ewanyshyn 1978, Chapman 1981).

All of these evaluations, moreover, have been rather wide-ranging and have not dealt exclusively with the

development of second language skills. They have documented such diverse aspects of immersion education as the immersion students' English language progress, the development of mathematics skills and attitudinal changes. As far as Spanish and French immersion is concerned, other more limited individual studies have examined the development of specific aspects of second language acquisition among French and Spanish immersion students, both in Canada and the United States (Selinker et al. 1975, Cohen 1976, Spilka 1976, Plann 1977, Connors et al. 1978, Politzer 1980).

On the other hand, evaluations of Ukrainian immersion (Muller et al. 1977, Ewanyshyn 1978, Lamont et al. 1978, Chapman 1981) have not reported in detail on the pattern of development of specific Ukrainian language skills specifically in the area of acquisition of phonology, syntax and morphology. Rather, they have limited themselves to an evaluation of progress in the development of Ukrainian language skills in general, as measured by an analysis of post-test and pre-test scores on a Ukrainian language skills test.

The importance for language teaching of individual studies in the areas of phonological, morphological and syntactic acquisition of a second language by a variety of second language learners has been stressed by Tarone et al. (1976). Until we possess a considerable body of

research in these areas, we shall not be able confidently to apply the findings of such studies to classroom teaching.

In a broader context, studies of specific aspects of language acquisition are a necessary prerequisite to our understanding of the whole phenomenon of child language acquisition. Indeed, by comparing child language acquisition in various languages Slobin (1973) is attempting to define a set of universal operating principles of language acquisition. He hopes that on the basis of these operating principles a number of more specific strategies can be derived, finally resulting in language-specific strategies for the acquisition of particular aspects of a given native language. The testing and modification of Slobin's universals will be based on language-acquisition research in as many diverse languages as possible.

Purpose of the Study

The purpose of this study is to add to our knowledge of child language acquisition by testing certain hypotheses about the acquisition of selected Ukrainian nominal morphological endings by children in the Ukrainian partial immersion classroom from kindergarten through grade seven.

Establishing the Hypotheses

The establishment of reasonable hypotheses about Ukrainian acquisition is hampered by a lack of data. Virtually no research has been done on Ukrainian language acquisition. Considerable work, however (the literature of which will be reviewed in Chapter Two), has been done on the acquisition of both Russian and Czech as native languages. In structure, Ukrainian and Russian are very similar, yet not exactly the same. Therefore, if as Slobin (1973) proposes, universal principles are involved in the acquisition by children of morphological endings, then a study of Ukrainian morphological acquisition should reveal some developments similar to those in Russian, some analogous developments, and other developments, which, owing to structural differences between Russian and Ukrainian, must necessarily be different in the two languages.

Slobin uses Russian data to support four of his proposed universals of language acquisition. These universals and supporting Russian data may be summarized as follows:

1) Proposed Universal E2:

> There is a preference not to mark a semantic category by ø ("zero morpheme"). If a category is sometimes marked by ø and sometimes marked by some overt

phonological form, the latter will, at some stage, also replace the *ø*.

Supporting Data from Russian:

The Russian noun singular accusative is marked by *ø* for masculine non-human and neuter nouns. Such nouns are first marked with the acoustically salient feminine accusative -*u* ending by Russian children.

2) Proposed Universal E3:

If there are homonymous forms in an inflectional system, those forms will tend not to be the earliest inflections acquired by the child. That is, the child tends to select phonologically unique forms, when available, as the first realization of inflections.

Supporting Data from Russian:

The first noun instrumental inflection used by Russian children is the masculine and neuter -*om*, rather than the more frequent feminine -*oj*. The suffix -*om* has only one homonym, while -*oj* represents five homonymous inflections (singular adjective inflections for masculine nominative, and feminine genitive, dative, instrumental, and locative cases).

3) Proposed Universal F2:

Rules applicable to larger classes are developed before rules relating to their subdivisions, and general rules are learned before rules for special cases.

Supporting Data from Russian:

Masculine animate nouns take a special accusative inflection in Russian. Subdivision of the noun class into the categories of animate and inanimate masculine for purposes of accusative inflection is typically late in Russian children, who initially prefer to use a single accusative form for all nouns.

4) Proposed Universal F1:

The following stages of linguistic marking of a semantic notion are typically observed:

i) no marking
ii) appropriate marking in limited cases
iii) overgeneralization of marking (often accompanied by redundant marking)
iv) full adult system.

Supporting Data from Russian:

The third stage can consist of substages of successive overgeneralizations, in which one form drives out another. For

> example, Russian children first use the masculine and neuter -om inflection for all singular noun instrumentals, then replace this with the feminine -oj, and only later sort out these two inflections. Similarly, Russian children first use the feminine past tense for all verbs, regardless of the gender of the subject noun, then use only the masculine for all verbs, followed by a period of mixed usage and the eventual separate marking of verb past tense to agree with the gender of the subject noun (Slobin 1973, pp. 203-205).

To reiterate, Slobin bases four of his universals, in part, on the following patterns in the acquisition of morphological endings by Russian children:

1) the generalization of the feminine -u accusative ending (Universal E2, #1 above)
2) the generalization of the masculine and neuter -om instrumental ending (Universal E2, #2 above; and F1, #4 above)
3) the late development of the animate/inanimate distinction in masculine nouns, as evidenced by late mastery of the -a masculine accusative ending (Universal F2, #3 above)
4) the initial generalization of the feminine past

> tense verb ending -*a*, which in turn is replaced by a generalized masculine past tense ending. This is followed by a period of mixed usage and eventually the Russian child learns to mark past tense verbs appropriately with masculine, feminine, neuter and plural endings.

In order to understand the similarities and differences in patterns of morphological acquisition which one might expect to encounter in comparing acquisition of Russian and Ukrainian, it is useful to compare the endings of the First Declension (-*a* hard-stem feminine) and Second Declension (hard consonant-stem masculine and -*o* neuter) in the two languages. These are the declensional forms which are first mastered by Russian children. According to Zakharova, they are the strongest and most influential noun endings "because of their outstandingly clear grammatical shape" (Zakharova 1973, p. 283). Indications are that the singular endings are mastered earlier than the corresponding plural ones (Dingwall and Tuniks 1973, p. 147).

The following differences and similarities in Russian and Ukrainian structure could be useful in comparing Russian and Ukrainian acquisition data:

Differences	Ukrainian	Russian
Dative singular masculine	-*ovi*	-*u*
Instrumental singular feminine	-*oju*	-*oj*

Identical forms

Accusative singular masculine	-*a* (animate) -*ø* (inanimate)
Instrumental singular masculine and neuter	-*om*
Accusative singular feminine	-*u*
Nominative plural masculine and feminine	-*y*
Nominative plural neuter	-*a*

Hypotheses

The structural differences between Ukrainian and Russian are such that, if universals of language acquisition are indeed responsible for the patterns of Russian morphological acquisition, the following hypotheses on the acquisition of Ukrainian morphological endings should prove true. In the course of Ukrainian language acquisition:

Hypothesis I

The feminine -*u* accusative ending will at some point be generalized as the universal accusative ending, as in Russian, in accordance with Universal E2.

Hypothesis II

The animate/inanimate distinction, which is of importance in marking the accusative of singular masculine nouns, will develop late, as in Russian, in accordance with Universal E3.

Hypothesis III

The masculine and neuter instrumental ending -*om* will not be generalized as the first expression of the instrumental case, because the Ukrainian feminine instrumental -*oju* is just as unique as -*om*. Moreover, since feminine nouns are more frequent in Ukrainian than neuter and masculine nouns, we assume that the feminine ending -*oju* occurs more frequently than -*om*. (The development here thus will not parallel the situation in Russian, where -*om* is generalized in accordance with Universal F2.)

Hypothesis IV

The dative singular masculine ending -*ovi*, being more unique in function than the dative singular feminine ending -*i*, will be generalized in accordance with Universal F2.

Hypothesis V

The masculine and feminine nominative plural ending -*y* will be, at some point, overgeneralized as the plural marker, in accordance with Universal F1. This generalization would be analogous to the generalization of the feminine past tense in Russian. There are indications of such a generalization in Russian as well (Dingwall and Tuniks 1973, p. 133).

Instrument

For the purpose of this study, picture-stimuli and oral questions will be used. This technique is similar to that used by Bogoyavlenskij (1973) for an experiment on the acquisition of Russian derivational morphology conducted in 1957, and by Dingwall and Tuniks (1973) in their study of Russian inflectional morphology. Both of these Russian-language instruments differ in one important aspect from the instrument used by Berko (1958) in her classic study of the acquisition of morphology in English. Berko for the most part used nonsense words on the assumption that if a child can correctly inflect a made-up word, then this is an indication that he is operating with general internalized rules. However, in order to avoid possible extraneous factors inherent in the very complex Ukrainian morphological system, only real words are used in our instrument.

Subject Sample

Students who have completed from one year (kindergarten) to eight years (grade seven) in the English-Ukrainian Bilingual Program (early partial immersion) and one parent of each child will be used. Since this study will be examining the relationship between parent language performance and child performance, the parent tested will be the one who, in his own estimation, speaks Ukrainian

better. It is assumed that the parent who speaks Ukrainian better will be a strong potential source of Ukrainian language influence on the child. (Self-reports of fluency have been used in at least one sociological study of Ukrainian language retention--see Kuplowska 1980.)

Procedure

Each subject will be shown a picture stimulus and asked a question designed to elicit a response necessitating the use of a specific morphological ending, as indicated in detail in Chapter Three.

Analysis of Data

Performance (percentage of correct responses on each grammatical ending) will be determined for both children and adults. The rank order of difficulty of grammatical endings will also be calculated and other comparisons made as indicated by the results (see Chapter Three).

Limitations

One should be cautious about generalizing the findings of this study to other children acquiring Ukrainian either as a first or second language, since our sample for the most part consists of children acquiring a second language in a specific learning situation (early partial immersion). Secondly, it has not been possible to control for various

individual variables such as motivation and exposure to the language outside the classroom, which may influence language acquisition.

Significance of the Study

Despite the limitations mentioned above, a study of the acquisition of Ukrainian nominal morphological endings in a partial immersion setting will be significant for the research in both first and second language acquisition. This will be the first study of the acquisition of Ukrainian morphology in Ukrainian immersion. It will add data on Slavic language acquisition which can readily be contrasted and compared with the data from Russian which Slobin (1973) has used in hypothesizing about universals of child language acquisition. Moreover, it will add to the data base on the morphological aspect of second language acquisition.

CHAPTER TWO

PRIOR RESEARCH IN THIS FIELD

Ukrainian Research

Research into Ukrainian language acquisition is almost negligible. In 1928-1929 the famous Ukrainian linguist Bulakhovs'kyj prepared a series of lectures on linguistics for the All-Ukrainian Correspondence Institute of National Education (Vseukrajins'kyj zaochnyj institut narodnoji osvity). Lecture 11 was entitled "Dytjacha mova" ("Child Language") (Bulakhovs'kyj 1975, p. 33). Unfortunately, because it is unavailable in North America, the contents of the lecture are not known here.[1]

In 1967 an article entitled "Formuvannja hramatychnykh katehorij u dytjachomu movlenni" ("The Formation of Grammatical Categories in Child Speech") appeared in Kiev (Voznyj 1967, pp. 205-214). In fact, the article does not deal with grammatical categories in general, but only with the acquisition of the genitive case. The author, T. M. Voznyj, bases his article on diary material of his daughter's language development. Using diary material

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[1] Repeated attempts, over a period of years, to obtain a copy of the original lecture have proven fruitless. Though the lecture on child language is mentioned in a bibliography of Bulakhovs'kyj's works in the first volume of his selected works which are appearing in Kiev, this lecture has so far not been reprinted.

from the same subject, in 1971 Voznyj published a second article, "Protses formuvannja systemy fonem u dytjachij movi" ("The Process of the Formation of the System of Phonemes in Child Language"), dealing with the development of phonology.

There do not seem to be any other studies on Ukrainian language acquisition. Statements about language acquisition which one finds in Ukrainian pedagogical material are based on Russian language data. For instance, in Kostjuk's (1968) textbook Psykholohija: Pidruchnyk dlja pedahohichnykh vuziv (Psychology: A Textbook for Pedagogical Institutes), in the section on child language development, the data on children's mastery of grammatical structure are based on Gvozdev's Russian language findings. (Kostjuk 1968, p. 325).

Likewise, in a textbook for preschool sections of pedagogical institutes, in the section "Znachennja ridnoji movy i osoblyvosti zasvojennja jiji dit'my" ("The Importance of the Mother Tongue and Children's Acquisition of It")(Sukhenko 1964, pp. 6-9), where some general characteristics of child language development from ages three to six are given, no sources for this data are stated, except for the information on word building by children. This information is adapted from K. Chukovskij, a popular writer on Russian child language development.

More generalities about child language are given in

Dydaktychni ihry i zanjatt'ja z dit'my rann'oho viku (Didactic Games and Lessons with Children of Early Age) (Ljubyts'ka 1975), a handbook for nursery school teachers. However, although the book itself is printed in Ukrainian and Ukrainian stories and songs have been added, it is in fact a translation from Russian. The information which it contains on child language development is taken from a Russian source, G. M. Ljamina's Razvitie rechi u detej v rannen vozraste (The Development of Speech in Early Childhood).

Russian Research

Research into Russian has been more extensive and is more accessible in the West. The most influential work has been Aleksandr N. Gvozdev's Voprosy izuchenija detskoj rechi (Questions of the Study of Child Speech) (Moscow 1961). In Slobin's words, this is "[t]he most careful and intensive longitudinal study of a child's language development ever published anywhere" (Slobin 1971, p. 344). Gvozdev, a Soviet linguist and teacher, kept a diary of the speech of his son Zhenya, almost daily for the first few years of the child's life, and recorded his language extensively until the age of nine (between 1921 and 1929). Slobin himself has done much to make Gvozdev's findings accessible in the English-speaking world because his own discussions of grammatical development and language

acquisition in Russian (Slobin 1963, 1971) are for the most part based on Gvozdev.

Other studies of Russian language acquisition include M. I. Popova's (1973) study of gender acquisition, A. V. Zakharova's (1973) investigation of the acquisition of grammatical forms by preschoolers and P. N. Bogoyavlenskij's (1973) investigation of children's understanding and use of suffixes in word derivation. These studies, as well as Gvozdev, provide Slobin with most of the Russian language data which he introduces in support of his language acquisition universals.

In 1970 Dingwall and Tuniks carried out a series of experiments in the Soviet Union

> in order to test a number of interesting hypotheses concerning developmental psycholinguistics which have recently appeared in the literature and which deal almost exclusively with the acquisition of English as a native language on a language whose structure is not only quite different from English, but which offers, we believe, a more tangible source of information on acquisitional strategies than does English (Dingwall and Tuniks 1973, p. 127).

One of their experiments was designed to test acquisition of case endings as correlated with age. Reference to findings will be made in analyzing our own findings.

Czech Research

Jaroslava Pačesová (1979) systematically studied the Czech language development of one child from the onset of speech until the age of five. She also made occasional

observations of one hundred children between the ages of two and six years in nurseries, schools and homes.

Some of her findings on morphological acquisition are similar to the findings in Russian. She notes that hard singular nominal endings are acquired most easily. Plural endings are acquired later, and according to her, this is a function of frequency. Statistically, singular endings are much more common than plural ones (p. 76). The nominative case is the most frequent and most stable in child speech. Moreover, children readily delineate three grammatical categories in the nominative: consonant-stem masculine, -a feminine and -o neuter. These hard endings are generalized to soft nouns.

The first oblique case acquired is the accusative. The genitive is also acquired early. According to Pačesová, these three cases--nominative, accusative and genitive--have the greatest "connotative power" and are used even at the stage of language development where most child speech still consists of one-word utterances.

The instrumental, dative and vocative are acquired relatively late, as compared with the nominative, genitive and accusative. Pačesová attributes this to the fact that they are less frequently used cases.

Pačesová does not indicate generalization of a universal feminine singular -u accusative ending as has been noted in Russian. She does, however, note a

generalization of the masculine singular -em instrumental ending to nouns like tata (dad) (p. 75). Nouns of this type, though masculine in gender, belong to a feminine declensional paradigm since their nominative singular form ends in -a, the typical feminine nominative singular ending. They consequently require a feminine-type instrumental singular ending. The Czech child, however, on the basis of noun gender, rather than paradigmatic considerations, gives them a masculine instrumental ending. Gender confusion also plays a part in generalization in the dative singular, where feminine nouns like doktorka (female doctor) and saň (dragon) are given a masculine dative singular ending.

Generalization is more marked in plural endings, including the nominative plural, where the masculine and plural nominative endings are generalized to the neuter (p. 67). This tendency is especially evident in cases like the instrumental plural (p. 76) which are acquired late, at a time when the child is perhaps becoming weighed down by the complexities of the Czech morphological system.

English Research

Because of the limited nature of English nominal inflectional morphology--one ending -s and its allomorphs, marking both plural and possessive--studies of English language acquisition offer few insights into the

acquisition of a comparatively complicated morphological system like Ukrainian. Indeed, Brown (1973, p. 294) has suggested that studies of morphological acquisition in other languages will be helpful in suggesting some of the factors operant in the acquisition of English itself (for instance, in identifying determinants of the order of English morpheme acquisition). Nevertheless, research into English language acquisition has investigated some issues of universal significance in studies of morphological acquisition.

Berko (1958), in a cross-sectional study of children between the ages of four and seven, was able to show, by using pictures and nonsense words, that children of that age do indeed operate using clearly delineated morphological rules, rather than rote memory of specific forms. Later studies (see Derwing and Baker 1979) confirmed and extended her findings.

Cazden (1972, p. 33), moreover, has identified developmental sequence patterns for the acquisition of the English plural morpheme. She delineates four periods in the developmental continuum:

1) absence of inflection
2) occasional production with no errors or overgeneralizations
3) increased production with errors and overgeneralizations

4) correct usage at the arbitrary 90% level (1972, p. 33).

She considered that the break between the second and third stages is a very significant developmental phenomenon, since overgeneralizations indicate the acquisition of a productive rule.

In a longitudinal study of three children, Brown (1973) found an amazing invariance in the order of morpheme acquisition. This order roughly corresponds to the order of difficulty in Berko's study and correlates highly with a cross-sectional study by de Villiers and de Villiers (1973).

Moreover, researchers have identified several variables as potential predictors of the order of acquisition of English inflections. These variables include semantic complexity, frequency, perceptual saliency, and, most recently, "'competition' among alternative or conflicting formal patterns, leading to a multivariate notion of 'rule strength'" (Derwing and Baker 1979, p. 213). No one variable, however, has been isolated as of prime importance. They likely interact in combination in a very complicated manner (de Villiers and de Villiers 1973, Derwing and Baker 1979).

In Chapter Four more detailed reference will be made to some of the research reviewed in this chapter, inasmuch as it will aid in the analysis of the data collected in this study.

CHAPTER THREE

TESTING AND SCORING

Testing was carried out in the summer of 1981 using students of the English-Ukrainian Bilingual Program and their parents.

Test Instrument

The test instrument consisted of twenty-five picture stimuli, each accompanied by an oral question designed to elicit an answer in a specific grammatical case. Two separate questions, using two separate lexical items, were used to test for the development of each case ending, except for the nominative singular neuter, as explained below. The cases tested for and the number of the questions designed to elicit them are illustrated in Table 1 (p. 23). The test instrument is presented in Appendix A.

All the endings tested for belong to the hard group of the first (feminine) and second (masculine and neuter) declensions. Nouns of the hard group have a stem ending in a hard (non-palatalized) consonant. Soft group Ukrainian nouns have a stem ending in a palatalized consonant, or jod, while the mixed group contains nouns whose stems end in a sibilant. Data from Czech (Pačesová 1979, p. 66) and Russian (Zakharova 1973, p. 282) suggest that

CASES TESTED TABLE 1

CASE	ITEMS	ENDING
Nominative singular masculine (Nom Sg M)*	2, 11	-0
Nominative singular feminine (Nom Sg F)	7, 24	-a
Nominative singular neuter (Nom Sg N)	5	-o
Nominative plural masculine (Nom Pl M)	13, 25	-y
Nominative plural feminine (Nom Pl F)	3, 8	-y
Nominative plural neuter (Nom Pl N)	1, 14	-a
Dative singular feminine (Dat Sg F)	10, 23	-i
Dative singular masculine (Dat Sg M)	12, 21	-ovi
Accusative singular feminine (Acc Sg F)	18, 22	-u
Accusative singular masculine--inanimate (Acc Sg M [In])	16, 20	-0
Accusative singular masculine--animate (Acc Sg M [An])	4, 9	-a
Instrumental singular feminine (Ins Sg F)	15, 19	-oju
Instrumental singular masculine (Ins Sg M)	6, 17	-om

* IN ALL OTHER TABLES ONLY THE ABBREVIATED NAMES OF THE CASES WILL BE GIVEN.

it is the hard group endings which are first acquired by Slavic children.

Choice of Cases to Be Tested

1) Nominative Singular

Questions eliciting an answer in the nominative singular case (2, 11--masculine; 24, 7--feminine; 5--neuter) were included to determine whether the subjects did indeed control the nominative case of the first and second declensions. According to Zakharova, "experiments show that in order to produce forms correctly, it is very important for a child to assimilate the structure of the word in the nominative" (Zakharova 1973, p. 283). Only one neuter item was included, because it was difficult to find a second neuter lexeme of high frequency which would be familiar to the subjects from kindergarten up. As we shall see, the one neuter item which was chosen was not all that satisfactory. Six nominative plural forms are present, two of each gender--feminine, masculine and neuter.

2) Accusative Singular

Four masculine accusative singular examples were included, two animate and two inanimate, as the two classes of nouns are treated differently in Ukrainian. Inanimate masculine nouns in the accusative case are generally marked by -*0*, while animates are always marked by -*a*.

Two forms of the feminine accusative singular, which

take the inflection -u, were also included, but no neuter accusative singular was included, as its form is always identical to the nominative.

3) Instrumental Singular

No neuter instrumental was included. In form it is identical to the masculine instrumental singular. Moreover, it was decided that the construction with the preposition z (with) would provide a more familiar and practical elicitation frame for this case, the instrumental of accompaniment. The neuter instrumental is rarely used in this sense for purely semantic reasons.

4) Other Cases

The other cases, nominative plural and dative singular, were chosen to test for the generalizations proposed in Hypotheses IV and V (see Chapter One, p. 10).

Choice of Lexical Items

Care was taken to choose lexical items which would be known to the children and which could be easily illustrated (see Appendix A, Test Instrument). The items chosen are given in Table 2 (p. 26).

An effort was also made to use the items in the forms most familiar to the children. Thus the diminutive forms kotyk (cat) and pesyk (dog) were used, since they are more current in children's vocabulary than the non-diminutive forms pes and kit. Moreover, by using the diminutives we

LEXICAL ITEMS TABLE 2

QUESTION NUMBER	GRAMMATICAL CASE	ENDING	LEXICAL ITEM
1	Nom Pl N	-a	avta
2	Nom Sg M	-ø	pesyk
3	Nom Pl F	-y	ryby
4	Acc Sg M (An)	-a	pesyka
5	Nom Sg N	-o	lizhko
6	Ins Sg M	-om	Sirkom
7	Nom Sg F	-a	ryba
8	Nom Pl F	-y	korovy
9	Acc Sg M (An)	-a	kotyka
10	Dat Sg F	-i	mami
11	Nom Sg M	-o	tato
12	Dat Sg M	-ovi	Burkovi
13	Nom Pl M	-y	kotyky
14	Nom Pl N	-a	lizhka
15	Ins Sg F	-oju	Oksanoju
16	Acc Sg M (In)	-ø	podarunok
17	Ins Sg M	-om	Petrom
18	Acc Sg F	-u	rybu
19	Ins Sg F	-oju	mamoju
20	Acc Sg M (In)	-ø	tort
21	Dat Sg M	-ovi	tatovi
22	Acc Sg F	-u	knyzhku
23	Dat Sg F	-i	babi
24	Nom Sg F	-a	korova
25	Nom Pl M	-y	pesyky

avoid the added complications of the elliptic *e* in *pes*, which disappears in oblique cases, and the change i→o in oblique cases of *kit* (for example, nominative--*kit*, instrumental--*kotom*).

Although the usual ending for hard-stem masculine nouns in the nominative singular is *ø* (zero morpheme), some of the most common masculine nouns have the ending -*o* in the nominative. These include *tato* (dad), *bat'ko* (father), dialectal *dido* (grandfather), common Christian names like *Petro* (Peter), *Pavlo* (Paul), and names for animal pets--*Sirko*, *Burko* (for dogs) and *Murko* (for cats). For this reason, one of the two nominative singular masculine forms used was an -*o* masculine (*tato*).

Pilot

The actual testing itself was preceded by a pilot which involved two children from each grade (kindergarten to grade seven) and two adults. The purposes of the pilot were:

1) to determine whether the questions were comprehensible to the younger students,
2) to determine whether the children would be able to respond to the questions posed, and
3) to determine whether the test instrument could, in fact, elicit answers in the appropriate cases.

The results of the pilot indicated that:

1) the children understood the questions,
2) they were able to respond to the questions posed, and
3) fluent speakers would, indeed, answer the questions using the appropriate grammatical form.

Therefore it was decided that the test instrument could be used to test acquisition of noun endings in Ukrainian.

Subjects

The subjects consisted of fifty-eight children enrolled in an early partial immersion second language program (the English-Ukrainian Bilingual Program) and thirty-one of their parents. Wherever possible, child subjects were chosen who had siblings in the same program. This was done to reduce the number of homes visited and the number of parents tested. One parent of each child was tested, the one who, in his own estimation, spoke Ukrainian better.

From personal knowledge of the language background of the subjects, the researcher was able to divide the child subjects into three groups according to their Ukrainian language experience.

Type of Subject	Number of Subjects
Fluent native speaker	3
Non-fluent native speaker	2

Non-native speaker	53

The fluent native speakers have good comprehension of Ukrainian and use it with few grammatical errors. The non-fluent native speakers have learnt Ukrainian at home, but although their comprehension of the language is good, their spoken language is marked by numerous mistakes. The non-native speakers come from English-speaking homes and are acquiring Ukrainian in the partial immersion classroom.

Although most of the children are not native speakers acquiring their first language, it may be assumed that their acquisition patterns correspond to those of native speakers in first language acquisition. Though the evidence is not conclusive, McLaughlin, after an extensive examination of the research to date, argues that a single acquisition system is utilized for both first and second language learning at all ages (McLaughlin 1978, p. 211). More specifically, on the question of the acquisition of morphology, a study by Grass (1980, p. 135) showed that the nature of morphological marking in the learner's first language was not a significant factor in determining his morphological errors in the second language being learned.

Grass goes on to delineate three factors which play a role in determining second-language learning patterns: 1) universal factors, 2) specific facts about the learner's native language, and 3) specific facts about the target language. Her study indicates that:

> [i]t is the universal principles of language that play the leading role since they are dominant in determining the relative order of difficulty of certain structures (Grass 1980, p. 140).

It must also be stressed that the children presently being studied are enrolled in a program which fosters language acquisition rather than language learning. Acquisition of a second language involves an unconscious construction of grammar rules, as opposed to the conscious attention to structure and verbalization of rules which are characteristic of formal language learning (Terrell et al. 1980, p. 155). According to this particular study, entitled "Can Acquisition Take Place in the Language Classroom?",

> [t]he important point about acquisition is that for it to take place certain conditions must be met, the most important of which is that the learners must hear the language spoken in meaningful contexts and must be able to understand the message conveyed by the language they hear (Terrell et al. 1980, p. 160, note 1).

This prerequisite is met by the English-Ukrainian Bilingual Program and other immersion programs as is evident from Roy's (1980) description of their basic language development strategy.

The breakdown of child subjects according to grade completed was as follows:

Grade	Number of Subjects
K	6
1	7

2	7
3	9
4	8
5	8
6	6
7	7
	total = 58

Socio-economic status, I. Q. and academic achievement were not considered in this study.

All the parents had known Ukrainian natively from childhood. None had learned it as a second language, though some had taken language courses. There was a considerable range of fluency within the parent sample, as will be evident from the findings.

Administering the Test

The test was administered orally in the homes of the subjects, and answers were recorded by hand. A sample answer sheet is included in Appendix A. For all child subjects the name, age, sex and grade completed were recorded at the top of the page. Only the name and sex of the adults were recorded. The order of administration of the questions was reversed for every second subject and the order employed was noted at the top of the answer sheet. The entire testing was carried out over a

period of three weeks in the summer of 1981. The raw data are presented in Appendix B (p. 108).

In the actual administration of the test the subject was shown the picture-stimulus and then orally questioned about it. His answer was recorded by hand on the answer sheet. All testing was done by the researcher himself. If the subjects seemed uncertain of the correctness of their reply, they were allowed a second try. The correct answer was always accepted over alternative responses.

Scoring the Data

Responses were marked as correct, wrong or no response.

1) No response

The no-response category was of significance only for those items (2, 5, 7, 11, 16, 18, 20, 22, 24) where the student was asked to provide the lexical item on his own. It was felt that if there was no response because of lack of vocabulary, this did not necessarily indicate a lack of grammatical knowledge. Therefore the percentage correct for each case was calculated by dividing the number of correct responses by the total number of actual responses. Generally, vocabulary was not a serious problem except in the case of some of the kindergarten subjects.

2) Correct responses

For most items only one response was accepted as correct with the following exceptions:

i) -i was accepted as a valid phonological variant of -y in items 3, 8 (nominative plural feminine) and 13, 25 (nominative plural masculine).[1] This is a phonological feature characteristic of certain south-western Ukrainian dialects (Zhylko 1955, p. 122; Matvijas 1969, p. 113).

ii) -ovy was accepted as a valid dialectal variant of the masculine dative ending -ovi in items 12 and 21. The dative ending -ovy is the usual form in almost all south-western Ukrainian dialects (Zhylko 1955, p. 96). Most Ukrainian immigration to Canada was from the south-western dialectal region.

iii) Three forms were accepted as correct for items 15 and 19 (instrumental singular feminine):

  a) -oju--the approved form in modern standard Ukrainian

  b) -ov--a dialectal form (pronounced [-ou̯] or [-ow]), widespread in the south-western dialects (Zhylko 1955, p. 95; Matvijas 1965, p. 24).

  c) -om--a dialectal feature characteristic of a certain part of the southwestern dialects (Zhylko 1958, p. 55), including those of the

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[1] Note that the underlined forms denote a transliteration of the Ukrainian orthography which is more or less phonemic and adequate for our purposes.

Lemko region (Stieber 1964, map 355), Sian River (Zhylko 1958, p. 90), and a small area in the Ternopil region (Dejna 1957, pp. 95-96, map VII; Matvijas 1965, p. 25) and Drohobych (Matvijas 1965, p. 25).

iv) The expected response to item 20 was tort (cake). This was the only response which the children gave. However, seven of the parents replied using the Ukrainian-Canadian form kek or kejk. This reply was accepted as correct, since kek and tort, both masculine nouns, require the same zero ending (-∅) in the accusative singular. When they were questioned after the testing about the word kek, it turned out that some of these seven parents were indeed familiar with the word tort but associated it with a Central European type of cake, rather than ordinary Canadian cake.

The percentage of correct responses for each item was calculated for the child group and the adult group separately. Initially there were twenty-five questions, two for each morphological ending being tested (except for the nominative singular neuter, which was represented by one question). The order of the questions had been randomized for test administration, and so it was necessary to recombine items to determine performance in a given morphological category. At this point it was

decided to exclude items 1 and 16, as will be explained in Chapter Four.

The remaining twenty-three items were condensed into thirteen case categories. A percentage of correct responses for each case ending was determined separately for children and adults. For both groups these cases were ranked according to the children's performance from highest to lowest. These findings are presented in Table 4 (p. 41), Table 5 (p. 44) and Table 6 (p. 46), and are analyzed in Chapter Four.

CHAPTER FOUR

ANALYSIS AND CONCLUSIONS

Exclusion of Individual Items

After a preliminary analysis, two items--1 and 16--were excluded from the analysis of the results.

Item 16, the accusative masculine singular form of the word podarunok (gift) was dropped from the analysis because it was questionable whether the majority of the children really were familiar with the nominative singular form of this word. Only 45% of the children who responded to item 16 used podarunok in the correct accusative form with the null inflection (-ø). On the other hand, 100% of the non-null responses were correct for item 20, the other example for the same morphological category. Items 16 and 20 were both testing the use of the null inflection (-ø) to mark the category of inanimate masculine singular accusative.

An initial analysis of the data showed that 26% of the responding children used the word podarunka, with the -a ending. The -a ending is a marker for animate nouns in the masculine accusative case. This suggested that in the accusative case, they were treating this inanimate noun as an animate, a tendency which is not unknown in Ukrainian (Brytsyn 1978, p. 114) and which has also been

noted in Czech language acquisition (Pačesova 1979, p. 68).

However, an analysis of performance on item 16 by performance groups, presented in Table 3 (see p. 38). suggests a more plausible explanation for such poor performance. Fifty-five percent of Group 1, the lowest performance group, did not respond to item 16 for lack of vocabulary. Of those who replied, two out of eleven (18%) used the word in the plural. Likewise, in Group 2 five of the children (13%) answered in the plural. Performance greatly improved in Group 3, where all but one of the group responded correctly with the -ø ending.

This led to the conclusion that the word podarunok is acquired rather late by children in the English-Ukrainian Bilingual Program. The first form which they likely encounter and use is the nominative or accusative plural podarunky. They would meet this form in discussions about Christmas and birthdays. Since the plural marker -y marks both masculine and feminine nouns the young child can only guess at a suitable singular form. The result is the feminine singular nominative back formation podarunka, which they then use as an unmarked accusative.

Feminine nouns are the most numerous group in Ukrainian and so frequency may in part explain a feminine back formation. It is also of interest that Ukrainian is characterized by a tendency to feminize foreign words (Ilarion 1969, p. 46). Modern literary Ukrainian has

TABLE 3

ITEM 16 PODARUNOK

ACCUSATIVE SINGULAR MASCULINE (INANIMATE)

GROUP	NO RESPONSE	-Ø	-A	-Y
1	54.54%	9.09%	18.18%	18.18%
2	7.89%	42.10%	34.21%	13.15%
3	0%	88.88%	11.11%	0%

the forms *zalja* (hall), *adresa* (address) and *visyta* (visit), all of which are foreign words which have been given a feminine ending. Some Ukrainian-Canadian neologisms, based on English borrowings, show the same tendency, for instance, *gara* ← car, *baksa* ← box, and (*zadna*) *lajna* (back) line, that is, "back alley".

Thus item 16 was excluded from the analysis, as it was not validly measuring the children's knowledge of the accusative singular masculine case. As for item 1, the nominative plural neuter form *avta* (cars) was eliminated because of the great discrepancy between adult performance on this item (42% correct) and item 14 (71% correct). Again, both questions tested for the same case, and, as with item 16, a vocabulary deficiency was undoubtedly the problem. The Ukrainian-Canadian word for car is *gara*, a feminine noun, and many of the adults must have been unfamiliar with *avto*, because 35% of them did not decline it at all. On the other hand, 100% of the parents marked item 14, the other neuter plural, with a plural marker.

It is of interest that the colloquial word for car in the Ukraine is *mashyna*, and that *avto*, according to Soviet Ukrainian usage, is indeclinable. Indeclinability is a characteristic of a certain class of Ukrainian nouns of foreign origin (Bilodid 1969, p. 123). On the other hand, in standard Ukrainian emigre usage, the common word

for car is avto, and it is declined as a regular neuter noun of the second declension. The top adult performance group handled the word perfectly.

Performance by Grade

The children were divided into eight groups according to grade completed (K-7), and performance on each case ending was determined for each grade (see Table 4, p. 41). A clear developmental pattern across grades, however, was not discernible from this analysis. This suggests that there is little linear correlation between amount of exposure to the language (years in the program) and the acquisition of morphology.

The developmental picture is, moreover, somewhat distorted by the presence of fluent native speakers in grades one, four and five, and non-fluent native speakers in grades four and seven. Thus the relatively high performance on the oblique (non-nominative) cases by the grade one sample is traceable, for the most part, to the performance of the native speaker in that group.

Two developments are, however, discernible from the raw class data. Firstly, performance on the neuter nominative singular and nominative plural lags behind performance on the feminine and masculine nominative cases. The high performance in the kindergarten group (100%) on the nominative singular neuter is somewhat misleading, as only 50% of this group responded to the

CHILD PERFORMANCE BY GRADE(Percentages) TABLE 4

CASE	K	1	2	3	4	5	6	7	TOTAL GROUP
Acc Sg M	100	100	100	100	100	100	100	100	100
Nom Sg F	100	92.85	100	100	93.75	100	100	100	98.23
Nom Sg M	91.66	92.85	100	100	100	93.75	91.66	100	96.55
Nom Sg N	100	80.00	20.00	88.88	87.50	85.71	83.33	71.42	78.00
Nom Pl F	25.00	50.00	64.28	66.66	93.75	56.25	100	92.85	68.96
Nom Pl M	8.33	50.00	42.85	55.55	81.25	56.25	83.33	92.85	59.48
Acc Sg F	0	42.85	7.14	11.11	43.75	25.00	16.66	14.28	21.05
Ins Sg M	0	21.42	7.14	0	12.50	25.00	33.33	28.57	15.52
Acc Sg M (An)	0	14.28	7.14	0	6.25	43.75	8.33	14.28	12.70
Ins Sg F	0	14.28	0	0	12.50	18.75	16.66	7.14	8.62
Nom Pl N	0	14.28	0	0	12.50	25.00	0	14.28	8.62
Dat Sg F	0	14.28	0	0	12.50	18.75	0	7.14	6.90
Dat Sg M	0	7.14	00	0	12.50	12.50	0	21.42	6.90
AVER.:	32.69	45.71	34.50	40.16	51.44	50.82	48.72	51.09	44.74
NO:	6	7	7	9	8	8	6	7	total= 58
MEAN AGE:	5.5		7.14	8.44	9.38	10.25	11.17	12.43	

question. A similarly poor performance on the neuter category is evident in the lowest adult performance group (see Table 6, p. 46). The second discernible development is a great improvement in marking the nominative plural (masculine and feminine) between kindergarten and grade one. After grade one, however, no consistent development pattern for marking this category can be noted.

Performance by Performance Groups (Tables 5, 6)

Since an analysis of the data according to grade offered so little indication of developmental patterns, it was decided to divide the children and parents into performance groups. Three child performance groups were formed, the characteristics of which are given below:

Child Performance Groups

Group	Parameters of Group (items correct)	Population	Mean Age
1	0-6	11	6.64 years
2	7-11	38	9.15 years
3	12-23	9	10.55 years

Child Performance Group 1 was formed to include all those children who answered approximately one-quarter of the items correctly. Group 2 consists of children who responded correctly to less than half the items, but roughly more than one-quarter. Group 3, which includes

among its members all the fluent and non-fluent native speakers, consists of children who provided the correct endings for more than half of the items. Child results are presented in Table 5 (p. 44).

When the data are analyzed in terms of these performance groups, a clearer developmental pattern is discernible for the children. We notice a gradual emergence of the nominative singular neuter and progress in the acquisition of the masculine and feminine nominative plural ending -y, culminating in 100% control in Group 3. The nominative plural neuter, however, is not being acquired. The comparatively high performance on it in Group 3 (44%) is to be attributed to the native speakers. Little progress is observable in acquisition of the oblique cases, but it is significant that the order of difficulty for the oblique cases is roughly the same for Groups 1 and 2 (non-native speakers) and Group 3, which includes five native speakers of varying fluency.

In order to analyze adult performance on individual items, the following adult sub-groups were also formed:

Adult Performance Groups

Group	Parameters (items correct)	Population
Adult A	0-15	7
Adult B	16-22	7
Adult C	23	17

CHILD PERFORMANCE GROUPS (Percentages) TABLE 5

CASE	ITEM	1	2	3	TOTAL GROUP
Acc Sg M (In)	20	100	100	100	100
Nom Sg F	24, 7	100	97.36	100	98.23
Nom Sg M	2, 11	95.45	96.05	100	96.55
Nom Sg N	5	60.00	75.00	100	78.00
Nom Pl F	3, 8	9.09	78.94	100	68.96
Nom Pl M	13, 25	0	67.10	100	59.48
Acc Sg F	18, 22	0	15.78	66.66	21.05
Ins Sg M	6, 17	4.54	7.89	61.11	15.52
Acc Sg M (An)	4, 9	0	6.57	50.00	12.70
Ins Sg F	15, 19	0	1.31	50.00	8.62
Nom Pl N	14	0	2.63	44.44	8.62
Dat Sg F	10, 23	0	1.31	38.88	6.90
Dat Sg M	12, 21	0	2.63	33.33	6.90
GROUP AVERAGE		28.39	42.50	72.65	44.74
NO.		11	38	9	
MEAN AGE		6.64 yrs.	9.15 yrs.	10.55 yrs.	
GROUP PARAMETERS IN ITEMS CORRECT		0-6	7-11	12-23	

The criteria used in forming adult performance groups were somewhat different from those used in forming child performance groups, since overall adult performance (87%) was so much higher than child performance (45%). In order to examine more closely the language usage of the most fluent adults, Group C was formed, consisting of all those adults who provided correct answers to all twenty-three questions. A middle performance group (Group B) was formed to include those adults who had answered more than 65% of the questions correctly. Group A was formed to include those parents who had achieved a score of 65% or less correct. The adult results are presented in Table 6 (p. 46).

A comparison of the child data from Table 5 with the data presented for Adult A, the lowest adult performance group, shows the following interesting similarities:

1) poorer performance on the nominative singular neuter (Adult A 43%, Child 84%), as compared with the nominative singular feminine (Adult A 100%, Child 98%) and masculine (Adult A 93%, Child 97%)
2) relatively high performance on the feminine (Adult A 100%, Child 69%) and masculine (Adult A 86%, Child 59%) nominative plural
3) poor performance on the nominative plural neuter (Adult A 14%, Child 9%)

ADULT PERFORMANCE (Percentages)

TABLE 6

CASE	ADULT A	ADULT B	ADULT C	TOTAL GROUP	CHILDREN
Acc Sg M (In)	83.33	100	100	96.66	100
Nom Sg F	100	100	100	100	98.23
Nom Sg M	92,85	100	100	98.38	96.55
Nom Sg N	42.85	85.71	100	83.87	78.00
Nom Pl F	100	85.71	100	96.77	68.96
Nom Pl M	85.71	92.85	100	95.16	59.48
Acc Sg F	7.14	100	100	79.03	21.05
Ins Sg M	42.85	100	100	87.09	15.52
Acc Sg M (An)	28.57	71.42	100	77.42	12.70
Ins Sg F	42.85	100	100	87.09	8.62
Nom Pl N	14.28	57.14	100	70.98	8.62
Dat Sg F	7.14	100	100	72.58	6.90
Dat Sg M	0	78.57	100	79.03	6.90
AVERAGE	49.81	90.10	100	86.47	44.74
NO	7	7	17		
GROUP PARAMETERS IN ITEMS CORRECT	0-15	16-22	23		

4) poor performance on oblique case morphology, as compared with acquisition of the nominative case, singular and plural (-y ending). Except for the accusative masculine singular (inanimate), on no oblique case does the performance reach more than 43% for Adult A and 21% for the children. The accusative masculine singular (inanimate) is identical in form to the nominative masculine singular (inanimate). Both take the -ø ending. The high performance of the Adult A group (83%) on this item and the children (100%) may be attributable to this fact.

Thus there are many performance similarities in the language of adults who acquired Ukrainian, though not to complete fluency, in a "natural" setting, and children who are acquiring it in the partial immersion classroom. This would seem to indicate that the variables which are determining the ease or difficulty of acquisition of various Ukrainian morphological endings are not directly a result of the setting where the language is being acquired. In fact, despite large differences between child and adult scores there is a significant correlation ($r=.82$, $p<.01$) in the rank order of difficulty of items for the two groups.

Case-by-Case Analysis of Data

1) Nominative Singular

Items 2, 11 (nominative singular masculine)
Items 7, 24 (nominative singular feminine)
Item 5 (nominative singular neuter)

Performance on the nominative singular masculine and nominative singular feminine was high across all performance groups and indeed across all grades. The nominative is, after all, the basic form of the word, from which other case forms are constructed.

Performance on the nominative singular neuter, item 5, was much poorer. Only 78% of the children correctly used this form, and the traditional mastery rate of 90% was reached only by the highest performance group. The category also posed problems for the adults--only 84% of them responded correctly.

A closer analysis, as presented in Table 7 (p. 49), reveals that 57% of Adult A, 25% of the child Performance Group 1, and 21% of the child Performance Group 2, gave item 15, the neuter word lizhko (bed), the feminine ending -a. It seems that for a certain percentage of the subjects, the neuter category is not clearly distinguished from the feminine.

A similar developmental pattern has been reported for Russian. Zhenya Gvozdev acquired the -a feminine nominative ending and the -ø masculine ending before the -o neuter (Dingwall and Tuniks 1973, p. 133). Zakharova

TABLE 7

ITEM 5 <u>LIZHKO</u>

NOMINATIVE SINGULAR NEUTER

GROUP	-A	-O
1	25.00%	75.00%
2	21.05%	71.05%
3		100%
ADULT A	57.14%	42.85%
ADULT B	14.28%	85.71%
ADULT C		100%

explains that in Russian

> [t]he earliest forms that the preschool child differentiates into separate systems are inflections of the feminine nouns ending in -a (first declension) and inflections of the masculine nouns with hard endings (second declension). What contributes to a quick establishment of this system of connections is the fact that in the Russian language the -a declension (mostly feminine) and the declension with a zero ending (mostly masculine), are, indeed, the strongest and most influential, because of their outstandingly clear grammatical shape (Zakharova 1973, p. 282).

Acquisition of the nominative singular neuter in Russian is complicated by the presence of neutralized vowels in unstressed final position and the children's tendency, in some cases, is to perceive a reduced -o ending as -a (Zakharova 1973, p. 283). However, Zakharova implies that even where the neuter ending -o is stressed and therefore phonologically distinct, Russian children have difficulty fitting neuter nouns into a declension system.[1] They often substitute the nominative neuter form for other oblique cases (Zakharova 1973, p. 282), even though the oblique neuter endings in the singular are exactly the same as the masculine ones, with their "outstandingly clear grammatical shape."

The slightly superior performance of the children (100%) on the inanimate accusative singular masculine

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[1] Czech children, surprisingly, seem to have no trouble establishing the three gender categories (-a feminine, -o neuter and -ø masculine) in the nominative singular (Pačesová 1979, pp. 66, 79).

(item 20) in contrast to their performance on the nominative singular masculine (97%) is easily explicable. Two items were used to test for the nominative singular masculine. Item 2, the word *pesyk* (dog), like the vast majority of words in this class, ends in -*ø*. All responses to item 2 were correct. Item 11 also tested the nominative singular masculine, but the word used here, *tato* (daddy), belongs to a very small category of masculine nouns ending in -*o*. All mistakes in the masculine nominative singular involved this item.

2) Nominative Plural

Items 3, 8 (nominative plural feminine)
Items 13, 25 (nominative plural masculine)
Item 14 (nominative plural neuter)

Though overall performance of the entire child sample on the nominative plural feminine (69%) and the nominative plural masculine (59%) was not outstanding, a strong positive acquisition trend can be seen across performance groups, as is evident from Table 5 (see p. 44).

Indeed, it could be argued that the only inflection, other than the nominative singular "basic" word endings, which is systematically being acquired by the children is the nominative plural marker -*y*. As we shall see later, the high performance on the accusative singular masculine inanimate by both children (100%) and adults (97%) can probably be attributed to the exact correspondence of nominative and accusative forms. Thus we can conclude that

the first semantic category being acquired and marked is number. This is in accord with the Russian findings, where number is the first morphological distinction to emerge (Slobin 1963, p. 140).[2]

The poor overall child performance on the nominative plural neuter (9%) is not the result of the children not marking for number. Number is marked, but usually incorrectly. For instance, in Performance Group 2, 56% of the children marked the neuter plural (item 14) with an overgeneralized masculine-feminine -y ending.

The overgeneralization of the masculine-feminine -y plural ending and the poor development of the neuter ending -a indicate that the children have acquired a semantic category (number), but have not fully mastered the morphological category, with its gender distinctions.[3] The overgeneralized -y ending accords with Hypothesis V, that the masculine and feminine nominative plural ending would be overgeneralized as the plural marker, at the expense of the neuter plural ending -a.

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[2] Two of our subjects, 7 and 8 (see Appendix B), attempted to mark this category by adding the English ending -s to the Ukrainian singular form.

[3] Likewise in Czech, the hard masculine and feminine -i ending is generalized and used in place of the soft nominative plural ending -e and the neuter hard ending -a (Pačesová 1979, p. 67).

3) Accusative

Item 20 (accusative singular masculine inanimate)
Items 18, 22 (accusative singular feminine)
Items 4, 9 (accusative singular masculine animate)

With the elimination of item 16, child performance results on item 20 indicated 100% mastery of the accusative singular masculine inanimate. It must be remembered, however, that this form of the word is, in fact, "uninflected", or, more specifically, inflected with the -ø, the null inflection. The accusative singular masculine inanimate generally corresponds in form exactly to the nominative singular masculine inanimate.

In marking hard-stem nouns of the first and second declension for accusative case, the speaker of Ukrainian or Russian has four regular markers to choose from:

i) -u to mark feminine gender, or a masculine noun ending in -a in the nominative singular

ii) -o to mark neuter accusative (as in the nominative)

iii) -ø to indicate an inanimate object, masculine singular

iv) -a to indicate, in most instances, an animate object, masculine singular

Findings in Russian have indicated that when the Russian child first begins to mark the semantic category of direct object (the accusative), he does it by using an overgeneralized -u (feminine) ending, feminine nouns being statistically the most frequent in child speech. Slobin

also attributes this generalization to a preference for marking a semantic category with an overt phonological form, in this case -u, as opposed to leaving it unmarked (Slobin 1973, p. 202).

From our data, there is no indication at all of a generalization of the -u ending into the masculine accusative. However, it is difficult to interpret this finding. Marking of other accusative classes (feminine--items 18, 22; masculine animate--items 4, 9) is negligible except in Performance Group 3, where 67% mark the accusative singular feminine correctly with -u. This group contains five native speakers.

The accusative is, however, the best developed oblique case for the children as a whole and for each performance group individually. Thus we can assume that it is the oblique case which is easiest to acquire. This is in line with Pačesová's findings that the accusative is the first case to emerge in Czech acquisition. It is also notable that although Pačesová indicates the generalization of the hard -u feminine accusative ending as the sole feminine accusative ending, she does not suggest that there is generalization across gender categories in the accusative. She does indicate a generalization of the masculine animate ending -a (Pačesová 1979, pp. 68-69). No similar trend is discernible in the data of this study.

It may well be that the children in the lower two

performance groups have not even begun to mark the semantic category of accusative in any form. Since there is no morphological distinction between the nominative and accusative of singular masculine inanimate nouns, it is very possible that in the case of item 20, the children are using the nominative form in place of the accusative. The use of the nominative instead of the accusative accounted for most of the errors in items 4, 9, 18 and 22.

The data collected bear little on either Hypothesis I or II. As the majority of child subjects have not begun to mark the accusative case, we have no evidence for the generalization of the -u feminine accusative ending, nor for a late development of the animate/inanimate distinction.

4) Instrumental

Items 15, 19 (instrumental singular feminine)
Items 6, 17 (instrumental singular masculine)

Performance levels for the children as a whole are low for both instrumental singular masculine (16%) and instrumental singular feminine (9%). It is, however, of significance that the -om (masculine-neuter) instrumental ending is being acquired more readily than the feminine ending -oju. Among all children tested, 16% used the masculine -om ending correctly, as compared with 9% for -oju.

Sources on Russian language acquisition (Slobin 1973, p. 203) note a generalized -om masculine-neuter

instrumental singular, despite the fact that feminine nouns greatly predominate in Russian children's speech. Slobin explains this phenomenon found in Zhenya Gvozdev's speech thus:

> Gvozdev's son Zhenya at first used the suffix -*om* for all singular noun instrumental endings, although this suffix is used only for masculine and neuter singular nouns. This suffix, however, has only one other function--a masculine and neuter prepositional case ending for adjectives. The corresponding dominant feminine singular noun instrumental ending, -*oi*, on the other hand, serves a variety of functions, being an adjectival suffix for four cases in the feminine and one in the masculine. Thus, although feminine nouns are more frequent in Russian child speech, Zhenya initially used the suffix of fewer meanings-- -*om*--for all instances of the instrumental case (Slobin 1971, p. 347).

Our own data, however, cast doubt on the plausibility of this assertion. The -*om* ending is obviously more "salient" for children acquiring Ukrainian as well, although the Ukrainian instrumental singular feminine ending -*oju* is as unique in function as is -*om*.[4]

Further evidence for the salience of -*om* is offered by developments in Ukrainian dialects. The ending -*om* has replaced the feminine form -*oju* in several Ukrainian dialects. Why this has happened has not been satisfactorily explained (Matvijas 1965, pp. 28-30). It does, however, suggest that even for adult speakers of Ukrainian

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[4] Wynnyckyj, in an unpublished manuscript, also reports an overgeneralization of the masculine -*om* endings in the speech of a child learning Ukrainian as a native language (Wynnyckyj 1981, p. 15).

the -*om* ending has a certain salient attraction. In Serbo-Croatian, moreover, -*om* is now the standard feminine ending (de Bray 1969, p. 325).

The occurrence of -*om* as a feminine marker had not been foreseen in the drawing up of the test instrument, and its appearance in the initial analysis of adult data was quite unexpected. The usual endings one encounters in Canada are standard Ukrainian -*oju* and dialectal -*ov*. Initially, therefore, all cases of -*om* as a feminine instrumental were marked as wrong. However, it was soon realized that fifteen instances of the use of -*om* in this case had occurred, and that its use was spread throughout the entire range of performance.

Further investigation revealed that, indeed, such a dialectal feature, though rare, did exist. Moreover, rural place names east of Edmonton (Jaroslaw, Peremyshyl) attest to the fact that settlers in those areas originated in the region of the Sian River dialects in far western Ukrainian ethnic territory, in what is present-day Poland. These dialects do have -*om* in the feminine instrumental, and descendants of settlers from that region may well have been among the research subjects. For these reasons, all instances of -*om* as the feminine instrumental were accepted as correct.

A close analysis of the performance of the adults shows some striking differences in their use of -*om* as a

feminine instrumental ending (see Table 8, p. 59). As a whole, the adults performed equally well on both masculine and feminine instrumental endings (87%--see Table 6, p. 46). In the highest adult performance group, however, only two subjects out of seventeen used the rather rare dialectal -om feminine ending. Two other subjects used dialectal -ov. In all other instances (74%), the subjects in the highest performance group used the standard ending -oju. In Adult Group B, the most common response for the feminine instrumental ending was -om (43%), followed by the usual south-western Ukrainian dialectal form -ov (36%). Among the lowest adult performance group (Group A), the most common feminine instrumental ending was the rather rare dialectal ending -om (36%). There was in this group only one instance of the use of standard -oju and no occurrence of the widespread dialectal -ov.

Although for the sake of consistency all instances of -om instrumental feminine were accepted as correct, the heavy concentration of its usage in the lower adult performance groups leads one to wonder whether, indeed, one is dealing with a valid dialectal form in every instance. Perhaps a tendency to generalize the masculine -om ending is in operation among the less fluent adult speakers. One cannot claim that the children are

TABLE 8

ITEMS 15,19

INSTRUMENTAL SINGULAR FEMININE (Percentages)

GROUP	-OJU	-OV	-OM	OTHERS
ADULT A	7.14	0	35.71	57.14
ADULT B	21.42	35.71	42.85	
ADULT C	73.52	14.70	11.76	

generalizing masculine -om to the feminine, as in Russian,[5] since only one instance of the generalization of -om occurred in the child data. Nor was -oju generalized.

Thus there is no evidence in support of Hypothesis III, that the instrumental feminine ending -oju would be generalized in Ukrainian language acquisition. However, the greater salience of -om among the children acquiring Ukrainian, despite the existence of the equally unique and more frequent -oju ending, casts some doubt on Slobin's assertion that the greater salience of -om in Russian language acquisition can be attributed to its relative uniqueness in function, in contrast with the Russian feminine instrumental ending -oj.

5) Dative

Items 12, 21 (dative singular masculine)
Items 10, 23 (dative singular feminine)

Performance by the children on the dative singular masculine (7%) and the dative singular feminine (7%) was very low. Moreover, for all performance groups, both child and adult, the dative items ranked among the lowest.

Child Performance Groups 2 and 3 and the adults found the dative more difficult than the instrumental. This is

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[5] Pačesová (1979, p. 75) reports a generalization of the Czech masculine instrumental ending -em to nouns which are feminine in form, but masculine in gender, like tata (dad). Thus instead of standard tatou, we have tatem.

somewhat surprising, in that the Czech data (Pačesova 1979, p. 75), Gvozdev's diary material, and the data of Dingwall and Tuniks (1973, pp. 149-150) suggest that the dative is acquired before the instrumental. The latter authors suggest that the late acquisition of the instrumental in Russian may be the result of semantic complexity and that

> it is conceivable that one could argue that the instrumental represents a more abstract semantic notion than do cases marking subject, object, recipient, possession, and location, and is therefore acquired after these (Dingwall and Tuniks 1973, p. 150).

Not only should the dative ending represent a semantically less complex category, but its usage in the test question should, supposedly, be semantically more salient. The dative questions involved two verbs that logically govern the dative (indirect object). These were <u>pokazaty</u> (to show, item 23) and <u>davaty</u> (to give, item 12). The need for an indirect object (dative) after <u>dopomahaty</u> (to help, items 10, 21) is, one might argue, less clear. However, there is no indication that performance on items 12 and 23 was actually better than performance on 10 and 21.

On the other hand, all examples of the use of the instrumental involved the instrumental of accompaniment, where the use of the instrumental case is not a function of semantics, but of syntax. Accompaniment is expressed by the preposition <u>z</u> (with) and the instrumental case. The instrumental marking is thus to come extent redundant.

One would assume that the semantically salient element in the instrumental of accompaniment construction would be the preposition z. Despite this, and the fact that non-prepositional constructions usually appear earlier in acquisition than prepositional ones (Voznyj 1967, p. 205; Pačesová 1979, pp. 117-118), the use of the instrumental in this particular construction was better developed among our subjects than the semantically more salient dative.

However, the superior performance of the subjects on the instrumental, as opposed to the dative, may possibly be attributable to the nature of the elicitation frames. The instrumental form of the interrogative pronoun, kym, may in itself have been a clue for the elicitation of the appropriate masculine nominal instrumental ending -om. The dative form of the interrogative pronoun, komu, used in questions 10, 12, 21 and 23, would, of course, be less helpful in eliciting the nominal dative endings -i and -ovi.

English interference may also have contributed to the poorer performance on the dative. In thirteen instances, the child subjects attempted to express the dative with a preposition. The prepositions used were do (to), nine times; za (for), once; and dlja (for), three times. The dative in Ukrainian is never governed by a preposition, and the use of the preposition here may well be a transfer

from English.

Pačesová (1979, p. 72), on the other hand, reports a generalization of the Czech masculine dative ending -ovi to other than masculine dative forms (-i, -u). However, according to her this ending is only generalized to feminine nouns where the gender of the noun is confused. Thus doktorka (female doctor) and saň (dragon) are given the masculine dative ending -ovi because they are perceived as being masculine (Pačesová 1979, p. 73).

Since the majority of mistakes in the dative items involved the use of the nominative case, it can be concluded that the majority of the children have not begun to mark the dative morphologically. Thus the data provide insufficient evidence to affirm or nullify Hypothesis IV, which predicted a generalization of the dative singular masculine ending -ovi, at the expense of the dative singular feminine -i.

Conclusions

1) Hypotheses I and II

As the majority of children have not yet begun to mark the semantic category of accusative morphologically, this study can neither support nor disprove Hypothesis I, that the feminine -u accusative ending will at some point be generalized as the universal accusative ending. Similarly, because of the poor development of the accusative category as such, there is not sufficient evidence to confirm nor

disprove Hypothesis II, that the animate/inanimate distinction in marking the accusative masculine singular would develop late in the course of acquisition.

2) Hypothesis III

Likewise, this study can neither support nor disprove Hypothesis III, which postulated that the instrumental singular feminine ending -oju would be generalized as the first expression of the instrumental case. However, the superior acquisition by the children of the masculine instrumental ending -om (16%), as opposed to the feminine ending -oju (9%), suggests that the ending -om is more salient, in Ukrainian as in Russian. Since Ukrainian -oju is as unique in function as -om, and more frequent, this finding casts some doubt on Slobin's assertion that the Russian instrumental -om is more salient in acquisition because of its uniqueness of function. Some other as yet unidentified variables must be responsible for the greater salience of the ending -om, for children acquiring Russian or Ukrainian.

3) Hypothesis IV

Since marking of the dative category is very low (7%) among the children, there are not sufficient data either to disprove or confirm Hypothesis IV, that the more unique dative singular masculine ending -ovi would be generalized as the dative marker. Though Russian findings have indicated that the instrumental is the most difficult case to acquire and have attributed this to semantic complexity,

the present study suggests that for both children and adults, the instrumental is acquired more easily than the dative.

4) Hypothesis V

Hypothesis V postulated that the masculine and feminine plural ending -*y* would, at some point, be overgeneralized as the plural marker. Findings from both the child and adult samples confirm this hypothesis.

CHAPTER FIVE

IMPLICATIONS AND SUGGESTIONS

Implications for Immersion Language Learning

The contrast between the pattern of Ukrainian language morphological development as revealed in this study of partial immersion students and first language acquisition in other highly-inflected languages is striking. According to Voznyj (1967), investigators of Russian, Polish, Slovak, Bulgarian, German and Latvian child language development all note that around the age of three, the child begins to make practical use of the declensional system. Similarly, Dingwall and Tuniks (1973, p. 147), in testing for the mastery of singular noun endings, discovered that the upper third of their sample (children ranging in age from 3,7,3 to 7,6,2) experienced virtually no difficulty in attaining perfect scores. Even in this study, the youngest native speaker, a grade one student, made only one mistake (she used an overgeneralized masculine dative ending with a feminine noun).

Does the lack of oblique case development in this sample of partial immersion students indicate a developmental stage, a temporary overgeneralization of the nominative which will be eradicated in time, or does it

show the development of a non-standard language? Obviously it is too early to tell on the basis of this one study of a program in its developmental stages, but recent studies of language acquisition in the immersion classroom suggest that inherent in this language-learning setting is the danger of the development of non-standard language (Cohen 1976, Plann 1977, Connors 1978, Politzer 1980, Swain and Lapkin 1981).

If indeed a non-standard or pidginized language is developing in the English-Ukrainian bilingual classroom, the factors contributing to such a development may well be similar to those factors which Plann (1977) identifies as contributing to a lack of progress in morpheme acquisition in a Spanish immersion classroom which she studied. She attributes the fossilization of errors in the children's interlanguage, as shown by a lack of improvement across grades, to the following factors:

1) the learner's attitudes and motivation, in the face of the low prestige of the target language in the community
2) the learner's needs in the classroom, where communication rather than language mastery is emphasized
3) limited exposure to the language outside the classroom
4) pressure to speak like one's peers.

Plann concludes that these factors

> . . . argue against the SIP children perfecting their command of their second language. Instead, the end result is that the children develop and reinforce their own classroom dialect. The fossilization of forms, particularly at the morphological level where semantic power is low, is perhaps an inevitable by-product of acquiring a second language in an immersion classroom (Plann 1977, p. 223).

One might speculate that the lack of oblique case development in our partial immersion students is due to a fossilization of the use of the nominative in all oblique case functions. Selinker, Swain and Dumas (1975, p. 149) note a generalization of the infinitive by French immersion students. They classify this as a form of simplification, the use of one form in all instances.[1] The structure of English would reinforce such simplification of Ukrainian structure, just as English structure might reinforce the marking of the plural category, which the Ukrainian immersion students acquired quite readily.

It would be interesting to test the immersion students on the development of the possessive genitive in Ukrainian nouns, since this category is also marked in English, and with the same ending as the plural. Such a study would help to identify more closely the reasons for the

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[1] Similarly, the generalization of masculine forms has been observed among French immersion students (Spilka 1976, p. 551).

morphological developments observed.

As in the case of Plann's Spanish immersion subjects, the Ukrainian immersion students may have little motivation to develop their Ukrainian for use outside the classroom. The opportunities for its use outside the classroom are limited and the attitudes towards the use of Ukrainian, as will be illustrated below, are rather ambiguous.

Although most of the pupils are of Ukrainian origin, with few exceptions they come from English-speaking homes. This is not surprising. According to census data from 1971, although 40% of Canadian-born Ukrainians in Edmonton at that time knew Ukrainian, only 8% of them claimed it as the language most often used at home (Driedger 1980, p. 125).

On the other hand, commitment to the maintenance of the language is high, as is evidenced by the very existence of the English-Ukrainian Bilingual Program. Strong commitment to Ukrainian language and rapid language loss are, moreover, not unique to Edmonton. They are characteristic of the position of the Ukrainian language in Canadian cities in general (Reitz and Aston, 1980). Such an equivocal attitude to the language on the part of native speakers, aptly characterized by Fishman (1972, p. 143) as an "attitudinal haloization unaccompanied by increased usage," can hardly motivate others to learn

Ukrainian and, more importantly, severely limits opportunities for using the language outside the classroom. Hayden (1966, p. 199), in a study of the dynamics of language maintenance, concludes that

> desire to preserve the ethnic mother tongue, even though expressed as highly favourable attitudes, contributes but little toward language mastery when the language is no longer used in the home.

Two evaluations of the English-Ukrainian Bilingual Program (Muller 1977, Ewanyshyn 1978) found a significant correlation between the use of Ukrainian in the home and achievement in Ukrainian. (See also Table 9, p. 78, for an analysis of the relationship between child and parent performance in this study.)

A detailed examination of the reasons for the non-use of Ukrainian in the home would be beyond the scope of this discussion. However, the adult sample studied may provide some insight into this problem. The achievement of the lowest adult performance group, Adult A, indicates that a certain percentage of the parents would have great difficulty using Ukrainian, since their command of basic structures is so poor. Moreover, from incidental conversation during the testing, it became apparent that many of the parents had a negative attitude toward their own Ukrainian language abilities (this was especially true of the two lower adult performance groups). The parents often underestimated their knowledge (as revealed by the testing) and assumed that they spoke some form of debased dialect,

rather than "the real Ukrainian taught in school."

Similarly, Kuplowska (1980) found that when she asked a sample of first, second and third generation Ukrainian speakers to rate themselves on fluency, only 19% of the second generation and almost none (.7%) of the third generation claimed fluency. As she pointedly notes,

> . . . there may be flaws in such self-reports, still they have an advantage, since 'perceived' levels of fluency can also be influential in attitudes towards language and other cultural issues (Kuplowska 1980, p. 138).

At the same time, some of the parents in the study sample rather naively overestimated their children's Ukrainian language abilities, and even suggested that their children spoke better Ukrainian than they did. The test findings indicated, however, that in the vast majority of cases this was not true. Possibly this illusion of child superiority in language performance is the result of the children's comparative fluency in Ukrainian reading and knowledge of "exotic" vocabulary items, like avto, as discussed earlier (p. 39). Such a complacent attitude may in the long run be detrimental to the children's language development. Since the parents are so accepting of the children's non-standard language, the children will feel no need to perfect it.

Even within the Ukrainian immersion classroom, the children have little need to perfect their knowledge of Ukrainian. As in all immersion programs, emphasis is on

communication. The children's comprehension and vocabulary development are such that they are able to communicate with the teacher and their fellow classmates without worrying about the niceties of grammar. Swain and Lapkin report that once the children in French immersion reach a point in their language development where they can make themselves understood, they have no strong social incentive to develop their language further toward native speaker norms (Swain and Lapkin 1981, p. 77).

Social incentive for language normalization in natural language acquisition is provided by the peer group, as has been noted by several researchers (Spilka 1976, Dulay and Burt 1977, Politzer 1980, Swain and Lapkin 1981). Indeed, Dulay and Burt (1977, p. 102) suggest that one of the affective factors delimiting actual linguistic input for the language learner is a preference for certain input models, specifically peer models, rather than teacher or parent models. Thus the peer is likely to be a more effective language teacher for the child than the classroom teacher. The pupil will be motivated to develop his language toward the norms of peer-group speakers of the target language, while the teacher model may not be able to provide the social motivation necessary for language normalization.

Ukrainian-speaking peer language models are almost entirely lacking in the Ukrainian bilingual classroom. In

most cases the sole source of Ukrainian language input is the teacher. The few native speakers in these classes may provide Ukrainian input in formal classroom situations, but they interact with the other children in English. The language of peer group interaction is definitely English,[2] and English is the language of the "real world" outside the classroom as well.

Connors et al. suggest that "the fundamental limitation on what immersion can do arises from its restriction to the classroom" (Connors et al. 1978, p. 71). In their view the classroom setting restricts the linguistic input both stylistically and situationally, and does not provide the learner with access to the same sort of input a native receives. The language presented in textbooks used in immersion may be artificial, and non-native speaker teachers, though competent in the language, may be using "a more conservative and stylistically underdifferentiated grammar" (Connors et al. 1978, p. 70) than a fluent native speaker would use. Furthermore, certain types of linguis-

[2] Indeed, one suspects that even among Canadian-born young adults who can speak Ukrainian, the language of peer group interaction is English. Ukrainian is reserved for use with elders and certain select groups, like academics and clergy. From the present researcher's own experience, conversations among the young often have a ritualized Ukrainian introduction, followed by a quick switch into English. This pattern of language usage may even be characteristic of some of the Ukrainian bilingual teachers themselves.

tic input may be totally absent for immersion students, since they do not meet the target language in ordinary social circumstances.

In addition one suspects that the language demands made on the student in the immersion classroom may in part be responsible for the type of language which develops there. Swain and Lapkin characterize immersion students' French language usage as "reactive" rather than active (Swain and Lapkin 1981, p. 82). Students rarely initiate the use of French themselves and do not seek opportunities for using it. They do, however, respond in French when a conversation is initiated in that language (p. 129). Their productive language skills, speaking and writing, remain non-native (p. 127). All of this suggests that the language demands in the immersion classroom do not favour the development of active language use and productive language skills (speaking and writing).

To facilitate better language skills development, Swain and Lapkin suggest that an immersion program will have to ensure more opportunities for the use of the target language outside the classroom and as intensive as possible exposure to the language in the school itself (Swain and Lapkin 1981, p. 85). More intensive exposure to the language can be assured by the implementation of total rather than partial early immersion, and by the establishment of immersion centres in schools where there

is no regular English program. One study referred to by Swain and Lapkin (1981, p. 128) suggests that the absence of a parallel regular English program in an immersion school does facilitate the wider use of the target language throughout the school and produces better language learning results.

The lack of curriculum incentives for language normalization might also contribute to non-standard language development. The prime goal of Ukrainian immersion, as of all immersion programs, is the development of communication skills. As a result, the development of morphology and other formal aspects of language is not systematically planned for nor evaluated by the program teachers and administrators. Little information is available about what actually goes on in the Ukrainian immersion classroom, but Swain and Lapkin report that in practice explicit teaching of grammar and structure are gradually incorporated into the French immersion curriculum (Swain and Lapkin 1981, p. 9). However, whether the incorporation of objectives for the teaching of grammar in immersion language programs would effectively facilitate normal language development is a moot point. Politzer (1980, p. 297) insists that second-language techniques are a natural ally to bilingual (immersion) teaching. Cohen, while suggesting formal classroom drills to counteract

overgeneralization, cautions that:

> . . . it still remains a research question as to how effective such systematic correction will be if it is not perceived by the learner as important in peer communication in the language (Cohen 1976, p. 573).

At this point, it is possible only to speculate about the ultimate type of Ukrainian language development which will take place in the immersion classroom. It is proposed, however, that the limited data on morphological development assembled in this study, the learning situation in the immersion classroom, and the situation of the Ukrainian language outside the classroom, all point to the strong possibility that a non-standard language may develop.

Suggestions for Further Research

This study has dealt with only a very limited aspect (nominal endings) of one area (morphology) of Ukrainian language acquisition. It has, moreover, limited itself to a very special population--immersion students.

Many more studies, both cross-sectional and longitudinal, using both native speakers and second language learners, and covering all aspects (morphological, syntactic, phonological) of language acquisition, will be necessary before research findings will be of real value in planning and evaluating Ukrainian immersion education.

Research must also be carried out into the various

aspects of language usage in the immersion classroom. It is not known specifically what type of linguistic input the immersion learner receives, nor what language demands are made upon him. Both of these factors do, of course, determine the type of language development which takes place in this setting.

Studies in the acquisition of Ukrainian as a first language would, of course, be invaluable. However, the state of Ukrainian language maintenance in Canada is such that extensive work in this area would not be feasible here. On the other hand, the political situation in the U. S. S. R. is not favourable to research on Ukrainian language acquisition in the Ukraine itself. This applies both to Ukrainian researchers and those from abroad who might wish to work in this field.

Thus the Ukrainian immersion programs in Alberta, Saskatchewan and Manitoba provide the most fruitful field for research on Ukrainian language acquisition. Longitudinal studies of various aspects of language acquisition by students in these programs could make a valuable contribution to the field of child language acquisition in general, and would be of aid in planning and evaluating the programs themselves.

TABLE 9

CHI SQUARE ANALYSIS OF PERFORMANCE GROUPS

Performance Grouping of Children According to Adult Groups

ADULT GROUPS

CHILD GROUPS	A	B	C	
1	3	3	5	n =11
2	9	7	22	n=38
3	1	1	7	n= 9
	n =13	n =11	n=34	

A χ^2 analysis shows that there is no significant relationships between columns (adults) and rows (children). This indicates that there is no significant relationship between the performance of the adults and that of the children and suggests that the children in our sample are not learning Ukrainian from their parents.

BIBLIOGRAPHY

Berko, J. "The Child's Learning of English Morphology." Word, 14 (1958), pp. 150-177.

Bilodid, I. K., gen. ed. Suchasna ukrajins'ka literaturna mova (Contemporary Literary Ukrainian). Morfolohija (Morphology). Ed. V. M. Rusanivs'kyj. Kiev: Naukova Dumka, 1969.

Bogoyavlenskij, D. N. "The Acquisition of Russian Inflections." In Studies of Child Language Development. Ed. C. A. Ferguson and D. I. Slobin. New York: Holt, Rinehart and Winston, 1973, pp. 284-292.

Brown, R. A First Language: The Early Stages. Cambridge, Mass.: Harvard University Press, 1973.

Bruck, M., W. E. Lambert and G. R. Tucker. "Bilingual Schooling through the Elementary Grades: The St. Lambert Project at Grade Seven." Language Learning 24 (1974), pp. 183-204.

Brytsyn, M. Ja., M. A. Zhovtobrjuch and A. V. Majboroda. Porivnjal'na hramatyka ukrajins'koji i rosijs'koji mov (A Comparative Grammar of Ukrainian and Russian). Kiev: Radjans'ka Shkola, 1978.

Bulakhovs'kyj, L. A. Vybrani pratsi v pjaty tomakh: Tom I (Selected Works in Five Volumes: Vol. I). Ed. I. K. Bilodid. Kiev: Naukova Dumka, 1975.

Cazden, C. Child Language and Education. New York: Holt, Rinehart and Winston, 1972.

Chapman, E. An Evaluation of the First Two Years of the English-Ukrainian Bilingual Program: Summary Report. Winnipeg: Manitoba Dept. of Education, 1981.

Cohen, A. D. "The Acquisition of Spanish Grammar through Immersion: Some Findings after Four Years." Canadian Modern Language Review, 32, No. 5 (May 1976), pp. 562-574.

Connors, K., N. Menard and R. Singh. "Testing Linguistic and Functional Competence in Immersion Programs." In Aspects of Bilingualism. Ed. M. Paradis. Columbia, S. C.: Horbeam Press, 1978, pp. 65-75.

de Bray, R. G. A. Guide to the Slavonic Languages. London: Dent, 1969.

de Villiers, J. G. and P. A. de Villiers. "A Cross-Sectional Study of the Acquisition of Grammatical Morphemes in Child Speech." Journal of Psycholinguistic Research, 2, No. 3 (1973), pp. 267-278.

Dejna, K. Gwary ukrainskie Tarnopolszczyzny (Ukrainian Dialects of the Ternopil' Region). Komitet Językoznawczy. Prace językoznawcze, 13 (Linguistics Committee. Linguistic Works, No. 13). Wrocław: Polska Akademia Nauk, 1957.

Derwing, B. and W. J. Baker. "Recent Research on the Acquisition of English Morphology." In Language Acquisition. Ed. P. Fletcher and M. Garman. Cambridge: Cambridge University Press, 1979, pp. 209-223.

Dingwall, W. O. and G. Tuniks. "Government and Concord in Russian: A Study in Developmental Psycholinguistics." In Issues in Linguistics: Papers in Honor of Henry and Renee Kahane. Ed. B. B. Kachru. Urbana: University of Illinois Press, 1973, pp. 126-184.

Driedger, L. "Urbanization of Ukrainians in Canada: Consequences for Ethnic Identity." In Changing Realities: Social Trends among Ukrainian Canadians. Ed. W. R. Petryshyn. Edmonton: Canadian Institute of Ukrainian Studies, 1980, pp. 107-133.

Dulay, H. and M. Burt. "Remarks on Creativity in Language Acquisition." In Viewpoints on English as a Second Language. Ed. M. Burt, H. Dulay and M. Finocchiaro. New York: Regents Publishing Co., 1977, pp. 95-129.

Ewanyshyn, E. Evaluation of a Ukrainian-English Bilingual Program 1976-1977. Edmonton: Edmonton Catholic Schools, 1978.

Fishman, J. A. The Sociology of Language. Rowley, Mass.: Newbury House, 1972.

Grass, S. "An Investigation of Syntactic Transfer in Adult Second Language Learners." In Research in Second Language Acquisition. Ed. R. C. Scarcella and S. D. Krashen. Rowley, Mass.: Newbury House, 1980, pp. 132-141.

Hayden, R. G. "Some Community Dynamics of Language Maintenance." In Language Loyalty in the United States. Ed. J. A. Fishman. The Hague: Mouton and Co., 1966, pp. 190-205.

Ilarion, Metropolyt. Nasha literaturna mova: Jak pysaty i horvoryty po-literaturnomu (Our Literary Language: How to Write and Speak It). Winnipeg: Volyn', 1969.

Kostjuk, H. S., ed. Psykholohija: Pidruchnyk dlja pedahohichnykh vuziv (Psychology: A Textbook for Pedagogical Institutes). Kiev: Radjans'ka Shkola, 1968.

Kuplowska, O. M. "Language Retention Patterns among Ukrainian Canadians." In Changing Realities: Social Trends among Ukrainian Canadians. Ed. W. R. Petryshyn. Edmonton: Canadian Institute of Ukrainian Studies, 1980, pp. 134-160.

Lambert, W. E. and G. R. Tucker. Bilingual Education of Children. Rowley, Mass.: Newbury House, 1972.

Lamont, D. et al. "Evaluation of the Second Year of a Bilingual (English-Ukrainian) Program." Canadian Modern Language Review, 34, No. 2 (January 1978), pp. 175-185.

Ljubyts'ka, A. M., ed. and trans. Dydaktychni ihry i zanjattja z dit'my rann'oho viku (Didactic Games and Activities with Children of an Early Age). Kiev: Radjans'ka Shkola, 1975.

McInnis, C. E. and E. E. Donoghue. Research and Evaluation of Second Language Programs: Final Report 1975-1976. Ottawa: Carleton Roman Catholic Separate School Board, 1976.

----------------------------------. Research and Evaluation of Second Language Programs: Final Report 1976-1977. Ottawa: Carleton Roman Catholic School Board, 1977.

McLaughlin, B. Second-Language Acquisition in Childhood. Hillsdale, N. J.: L. Erlbaum Associates, 1978.

Matvijas, I. H. "Formy mnozhyny imennykiv I vidminy v ukrajins'kij movi" ("Nominal Plural Forms of the First Declension in Ukrainian"). In Ukrajins'ka dialektna morfolohija (Ukrainian Dialectal Morphology). Ed. F. T. Zhylko. Kiev: Naukova Dumka, 1969, pp. 112-140.

---------------. "Orudnyj vidminok imennykiv I vidminy v ukrajins'kij movi" ("The Instrumental Singular of First Declension Nouns in Ukrainian"). In Terytorial'ni dialekty i vlasni nazvy (Territorial Dialects and Proper Names). Ed. K. K. Tsilujko. Kiev: Naukova Dumka, 1965, pp. 16-31.

Muller, L. J. et al. "Evaluation of a Bilingual (English-Ukrainian) Program." Canadian Modern Language Review, 33, No. 4 (March 1977), pp. 476-485.

Pačesová, J. Řeč v ranem detstvi (Language in Early Childhood). Brno: Univerzita J. E. Purkyně, 1979.

Plann, S. "Acquiring a Second Language in an Immersion Classroom." In Teaching and Learning English as a Second Language: Trends in Research and Practice. Ed. C. A. Yorio and R. H. Crymes. Washington, D. C.: Teachers of English to Speakers of Other Languages, 1977, pp. 213-225.

Politzer, R. L. "Foreign Language Teaching and Bilingual Education: Research Implications." Foreign Language Annals, 13, No. 4 (1980), pp. 291-297.

Popova, M. I. "Grammatical Elements of Language in the Speech of Pre-School Children." In Studies of Child Language Development. Ed. C. A. Ferguson and D. I. Slobin. New York: Holt, Rinehart and Winston, 1973, pp. 269-280.

Reitz, G. and M. A. Ashton. "Ukrainian Language and Identity Retention in Urban Canada." In Ukrainians in the Canadian City. Ed. W. V. Isajiw. Canadian Ethnic Studies (special issue), XII, No. 2 (1980), pp. 33-55.

Roy, R. R. "Immersion Defined by Strategy." Canadian Modern Language Review, 36, No. 3 (March 1980), pp. 403-407.

Selinker, L., M. Swain and G. Dumas. "The Interlanguage Hypothesis Extended to Children." Language Learning, 25, No. 1 (1975), pp. 139-152.

Slobin, D. I. "The Acquisition of Russian as a Native Language." In The Genesis of Language. Ed. G. A. Miller and F. Smith. Cambridge, Mass.: M. I. T. Press, 1963, pp. 129-148.

------------. "Cognitive Prerequisites for the Development of Grammar." In Studies of Child Language Development. Ed. C. A. Ferguson and D. I. Slobin. New York: Holt, Rinehart and Winston, 1973, pp. 175-208.

------------. "Grammatical Development in Russian Speaking Children." In Child Language. Ed. A. Bar-Adon and W. F. Leopold. Englewood Cliffs, N.J.: Prentice Hall, 1971, pp. 343-348.

Spilka, I. V. "Assessment of Second-Language Performance in Immersion Programs." Canadian Modern Language Review, 32, No. 5 (May 1976), pp. 543-561.

Stieber, Z. Atlas językowy dawnej Łemkowszczyzny (A Linguistic Atlas of the Old Lemko Region). Łódzkie Towarzystwo Naukowe, Wydział I, Prace 21 (Łódź Scientific Society, Vol. I, No. 21). Łódź: Zakład im. Ossolinskich, 1964.

Sukhenko, Je. K., T. V. Kosma and O. M. Leshchenko. Metodyka rozvytku ridnoji movy v dytjachomu sadku (Methodology of Native Language Development in Kindergarten). Kiev: Radjans'ka Shkola, 1964.

Swain, M. and S. Lapkin. Bilingual Education in Ontario: A Decade of Research. Toronto: Ontario Institute for Studies in Education, 1981.

Tarone, E., M. Swain and A. Fathman. "Some Limitations of the Classroom Applications of Current Language Acquisition Research." TESOL Quarterly, 10, No. 1 (March 1976), pp. 19-32.

Terrell, T., E Gomez and J. Mariscal. "Can Acquisition Take Place in the Language Classroom?" In Research in Second Language Acquisition. Ed. R. C. Scarcella and S. D. Krashen. Rowley, Mass.: Newbury House, 1980, pp. 155-161.

Van Naerseen, M. "How Similar Are Spanish as a First Language and Spanish as a Foreign Language?" In Research in Second Language Acquisition. Ed. R. C. Scarcella and S. D. Krashen. Rowley, Mass.: Newbury House, 1980, pp. 146-154.

Voznyj, T. M. "Formuvannja hrammatychnykh katehorij u dytjachomu movlenni" ("The Formation of Grammatical Categories in Child Speech"). In Ukrajins'ke usne literaturne movlennja (The Ukrainian Oral Literary Language). Ed. I. K. Bilodid. Kiev: Naukova

Dumka, 1967, pp. 208-214.

------------. "Protses formuvannja systemy fonem u dytjachij movi" ("The Process of the Formation of the Phoneme System in Child Language"). *Movoznavstvo*, 3 (1971), pp. 63-67.

Wynnyckyj, O. A. *The Acquisition of the Nominal Case System in Two Ukrainian Children*. Unpublished manuscript in possession of Dr. T. Priestly, Dept. Slavic and East European Studies, University of Alberta, Edmonton.

Zakharova, A. V. "Acquisition of Forms of Grammatical Case by Pre-School Children." In *Studies of Child Language Development*. Ed. C. A. Ferguson and D. I. Slobin. New York: Holt, Rinehart and Winston, 1973, pp. 281-284

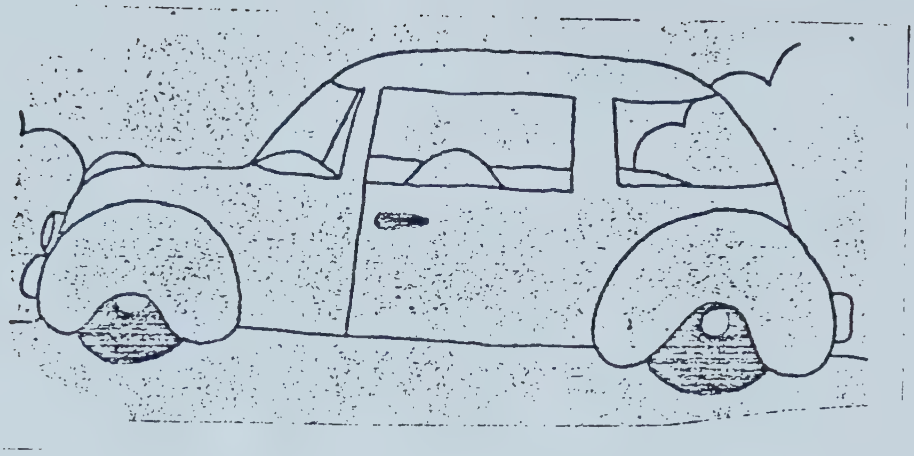
Zhylko, F. T. *Hovory ukrajins'koji movy* (Ukrainian Dialects). Kiev: Radjans'ka Shkola, 1958.

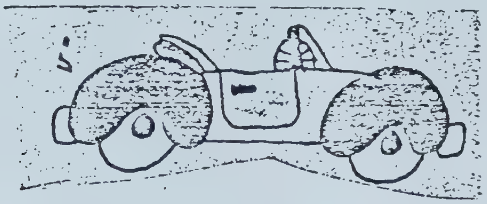
------------. *Narysy z dialektolohiji ukrajins'koji movy* (Essays on Ukrainian Dialectology). Kiev: Radjans'ka Shkola, 1955.

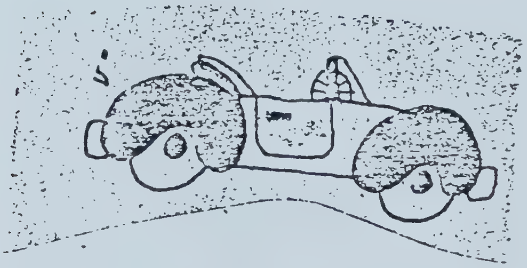
APPENDIX A

Test Instrument

1) The instrument consisted of picture-stimuli presented on 6" x 9" cards, which are reproduced here.
2) The elicitation question was printed in Ukrainian orthography on the back of each card, since the test was entirely oral.
3) For purposes of presenting the instrument, the questions, with English translation, are printed below the reproductions of the cards.

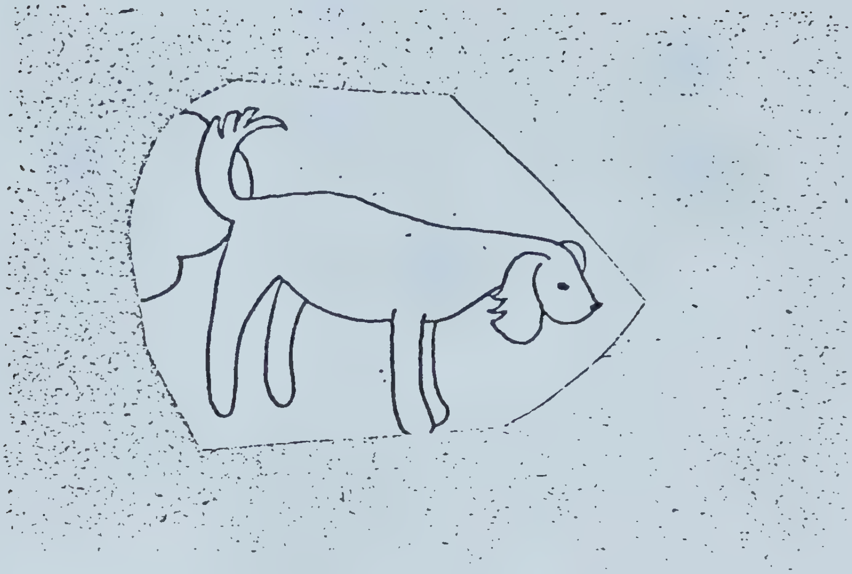






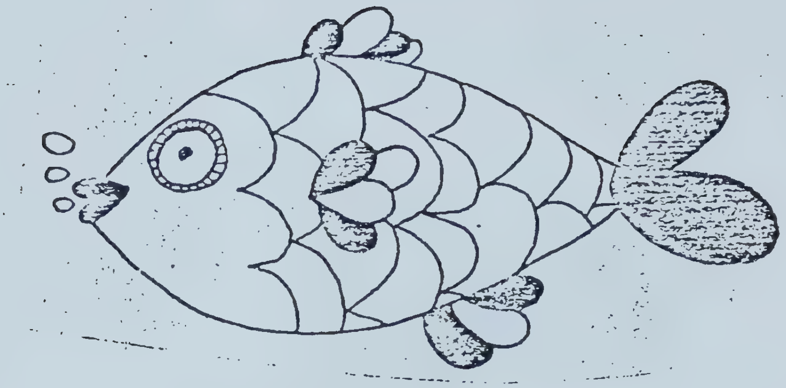
1. Тут велике авто, а тут...?

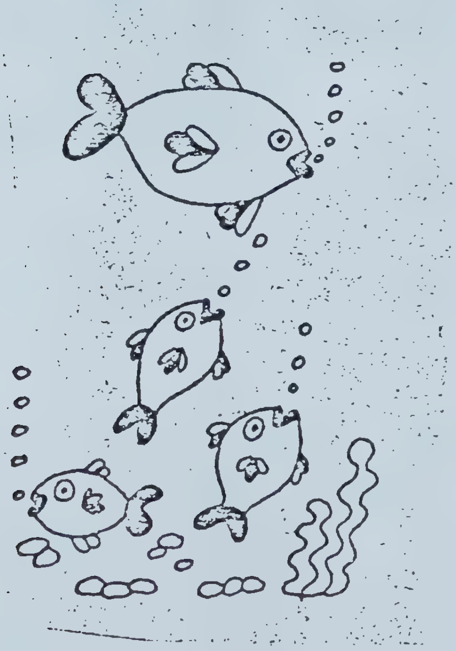
Here is a big car, and here . . . ?



2. Що це?

What is this?



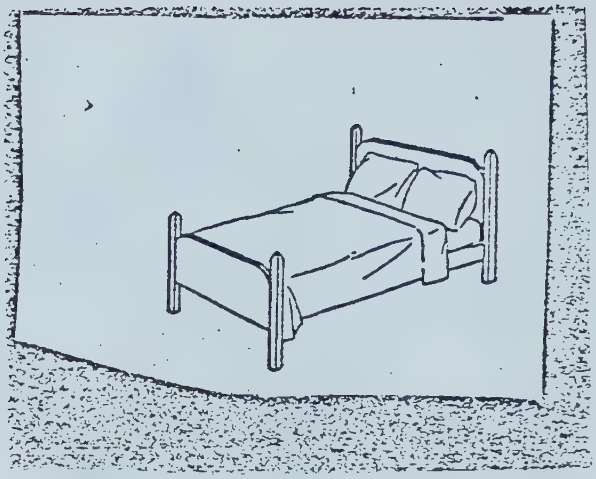


3. Тут велика риба, а тут...?

Here is a big fish, and here . . . ?

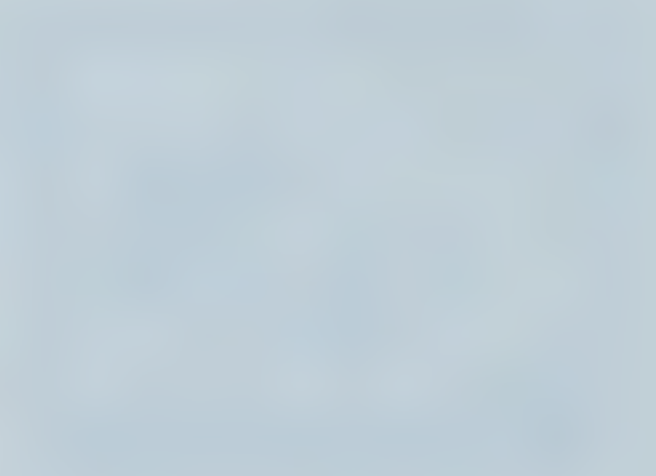
4. Це Оксана. Вона любить малювати.
Що вона малює?

This is Oksana. She likes to draw. What is she drawing?



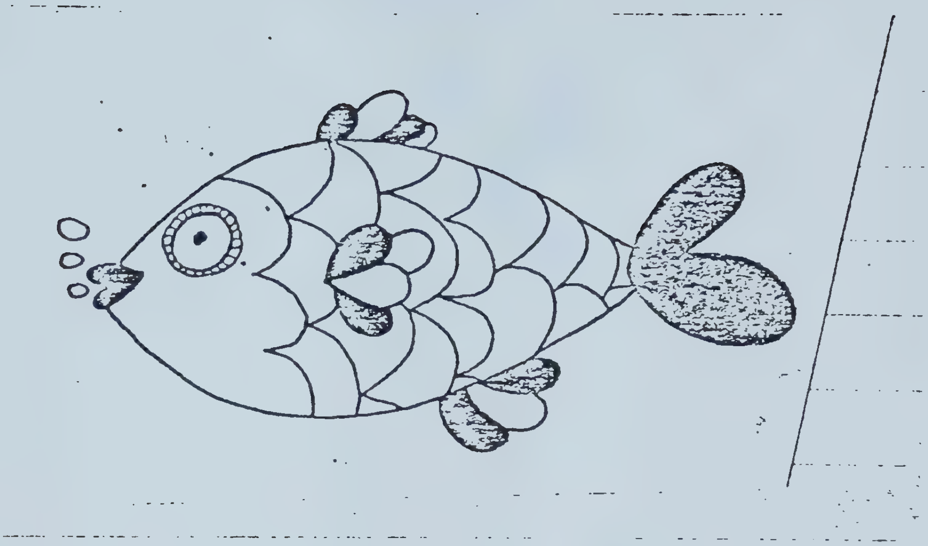
5. Що це?

What is this?



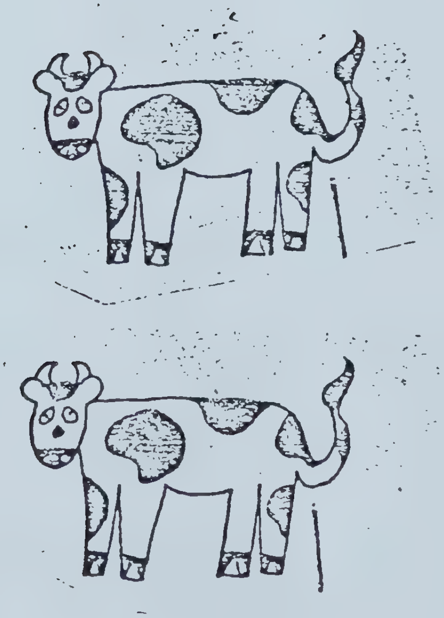
6. Це Петро. Це його песик Сірко.
З ким Петро скакає?

This is Petró. This is his dog Sirko. With whom is Petró skipping?



7. Що це?

What is this?



8. Тут велика корова. А тут...?
Here is a big cow, and here . . . ?

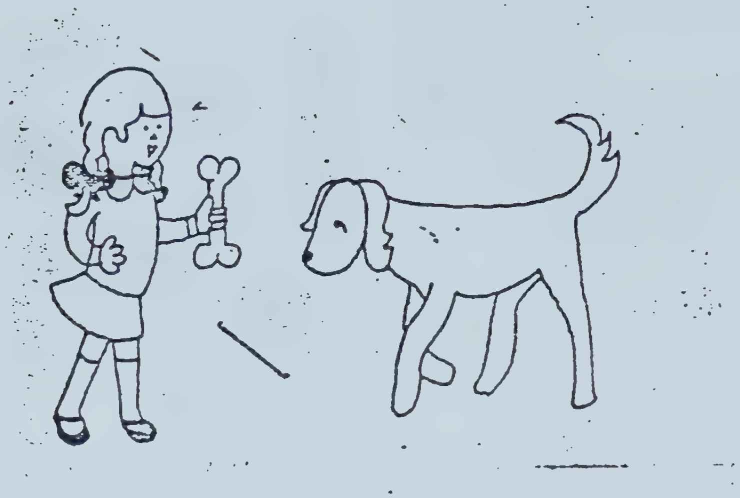
9. Це Петро, а це його котик. Що Петро тримає?
This is Petró, and this is his cat. What is Petró holding?

10. Це Оксана. Це Оксанина мама.
Оксана дуже любить допомагати. Кому Оксана допомагає?

This is Oksana. This is Oksana's mother. Oksana likes to help. Whom is Oksana helping?

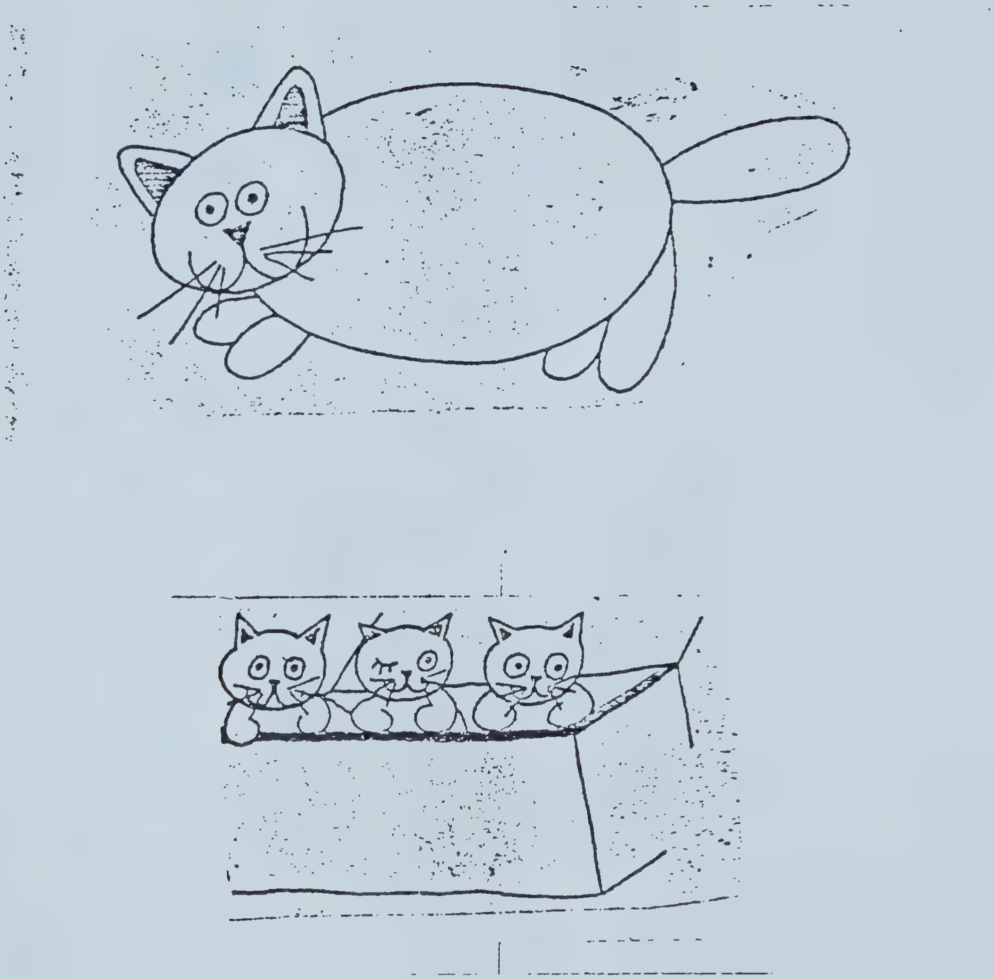
11. Це діти, а хто це?

These are children, and who is this?

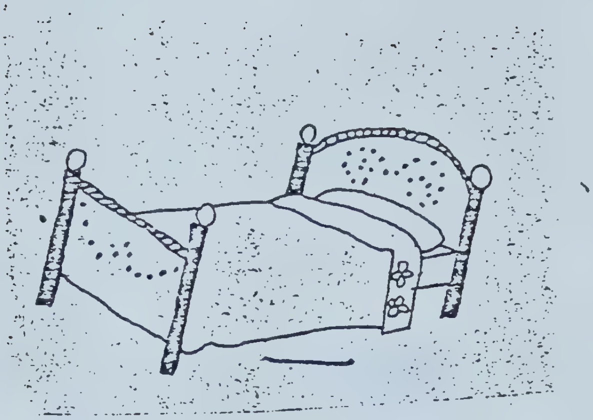


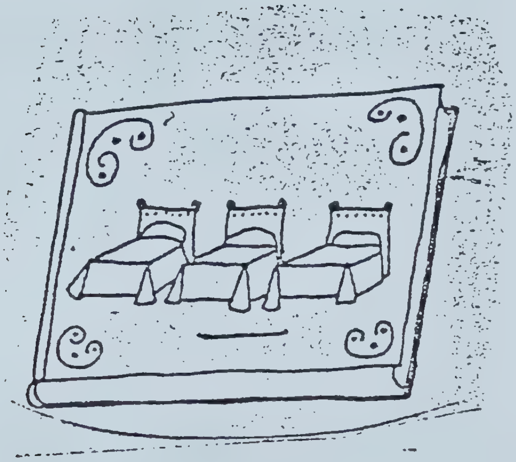
12. Це Оксана. Це Оксанин песик Бурко.
Кому Оксана дає їсти?

This is Oksana. This is Oksana's dog Burkó.
Whom is Oksana feeding (literally, "giving to eat")?



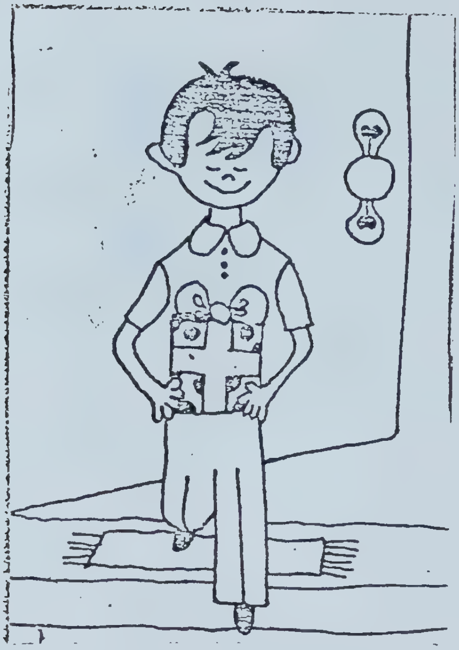
13. Тут великий котик, а тут...
Here is a big cat, and here . . . ?





14. Тут велике ліжко, а тут...?
Here is a big bed, and here . . . ?

15. Це Оксана. Це Петро.
Вони часто бавляться разом. З ким Петро бавиться?
This is Oksana. This is
Petró. They often play together. With whom is
Oksana playing?



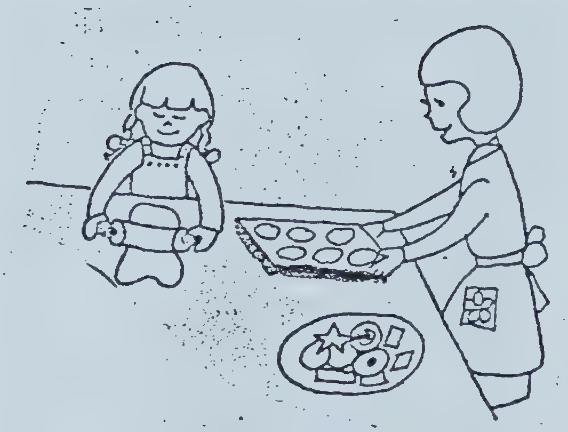
16. Це Петро. Що він тримає у руці?
This is Petró. What is he holding?

17. Це Оксана. Це Петро.
Вони часто бавляться разом. З ким Оксана бавиться?

This is Oksana. This is Petró.
They often play together. With whom is Oksana playing?

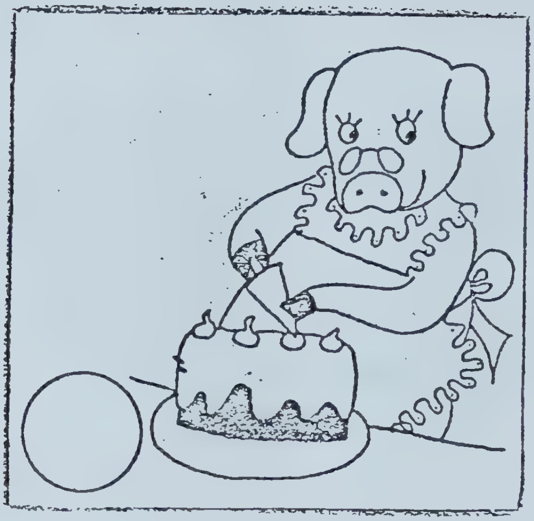
18. Це Петро. Він часто їздить на озеро.
Що він зловив на озері?

This is Petró. He often goes to the lake.
What did he catch at the lake?



19. Це Оксана. Це Оксанина мама.
Оксана любить працювати. З ким Оксана працює?

This is Oksana. This is Oksana's mother. Oksana likes to work. With whom is Oksana working?



20. Це пані Свинка. Вона любить пекти.
Що вона спекла?
This is Mrs. Pig. She likes to bake.
What has she baked?

21. Це Петро. Це Петрів тато.

Петро дуже любить допомагати. Кому Петро допомагає?

This is Petró. This is Petró's father. Petró really likes to help. Whom is Petró helping?

22. Це Оксана. Вона дуже любить читати.

Що Оксана читає?

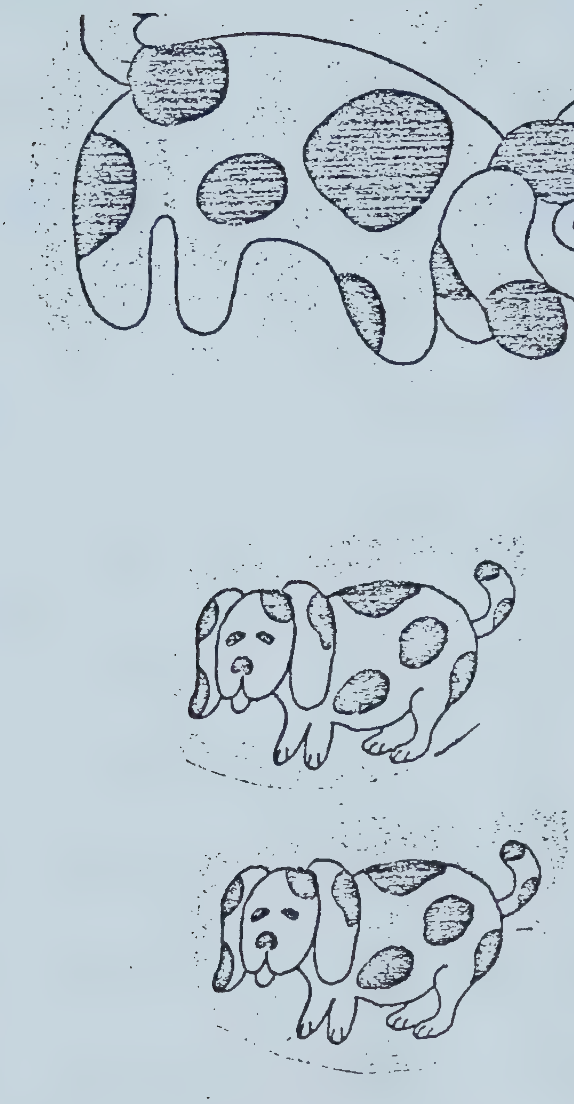
This is Oksana. She really likes to read.
What is Oksana reading?

23. Це Петро. Це Петрова баба.
Петро купив котика. Кому він показує котика.

This is Petró. This is Petró's grandmother. Petró has bought a cat. To whom is he showing his cat?

24. Що це?

What is this?



25. Тут великий песик, а тут...?

Here is a big dog, and here . . . ?

Sample Answer Sheet

Name ________________ Order 1 2

Sex M F

Age ________ Grade ____

1. а и ___
2. ф а ___
3. м а ___
4. а ф ___
5. о ___
6. ом ф ___
7. а ___
8. и а ___
9. а ф ___
10. і а ___
11 о ___
12 обі ф ___
13 и ф ___
14. а и ___
15. ою а ___
16. ф ___
17. ом ф ___
18. у а ___
19. сю а ___
20 ф ___
21 обі ф ___
22 у а ___
23 і а ___
24 а ___
25 и ф ___

APPENDIX B

Presentation of Raw Data

1) The child subjects were grouped according to grade and a number was assigned to each subject beginning with the kindergarten children and proceeding sequentially to grade seven.
2) Then adult subjects were assigned numbers.
3) Each subject's responses were recorded in the column below his number
4) *No response* is marked as *x*.
5) With two exceptions all responses are transliterations of the Ukrainian orthography which is more or less phonemic and adequate for our purposes. The exceptions are:
    - i) -*0*, and
    - ii) -*s*, the English plural ending, used by subjects 7 and 8.

GROUP:		Kindergarten						Grade 1			
SUBJECT:		1	2	3	4	5	6	7	8	9	10
ITEMS	1	a	o	o	y	o	o	os	os	a	o
	2	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
	3	y	a	a	y	a	a	i	as	y	a
	4	∅	∅	∅	∅	∅	∅	∅	∅	a	∅
	5	x	x	x	o	o	o	x	o	o	o
	6	∅	∅	∅	∅	∅	∅	∅	∅	om	∅
	7	x	x	a	a	a	a	a	a	a	a
	8	a	a	a	y	a	a	a	a	y	a
	9	∅	∅	∅	∅	∅	∅	∅	∅	a	∅
	10	a	a	a	a	a	a	a	a	i	a
	11	u	o	o	o	o	o	o	o	o	o
	12	∅	∅	∅	∅	∅	∅	∅	∅	ovi	∅
	13	∅	∅	∅	y	∅	∅	∅	s	y	y
	14	o	o	o	y	o	o	o	o	a	o
	15	a	a	a	a	a	a	a	a	oju	a
	16	x	x	x	a	x	x	x	x	∅	x
	17	∅	∅	∅	∅	∅	∅	∅	∅	om	∅
	18	x	x	a	a	a	a	a	a	u	a
	19	a	a	a	a	a	a	a	a	oju	a
	20	x	x	x	∅	x	x	x	∅	∅	∅
	21	∅	∅	∅	a	∅	∅	∅	∅	ovi	∅
	22	a	a	a	a	a	a	a	u	u	a
	23	a	a	a	a	a	a	a	a	ovi	a
	24	x	a	a	a	a	a	a	a	a	a
	25	∅	∅	∅	∅	∅	∅	∅	∅	i	y

RAW DATA

GROUP:		Grade 1			Grade 2						
SUBJECT:		11	12	13	14	15	16	17	18	19	20
ITEMS	1	o	y	o	y	y	o	o	y	y	u
	2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
	3	y	y	a	y	y	a	a	y	y	a
	4	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
	5	u	o	x	a	x	o	x	a	a	u
	6	ø	om	ø	ø	om	ø	ø	ø	ø	ø
	7	y	a	a	a	a	a	a	a	a	a
	8	y	y	a	y	y	a	y	y	y	a
	9	ø	ø	ø	ø	a	ø	ø	ø	ø	ø
	10	a	u	a	a	a	o	a	a	a	a
	11	o	u	o	o	o	o	o	o	o	o
	12	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
	13	y	y	ø	y	y	ø	ø	y	y	ø
	14	y	y	o	y	y	o	o	o	y	o
	15	u	a	a	a	a	a	a	a	a	a
	16	y	a	y	y	x	a	ø	ø	a	a
	17	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
	18	u	a	a	a	a	a	a	a	a	a
	19	a	a	a	a	a	a	a	a	a	a
	20	ø	x	ø	ø	ø	ø	ø	ø	ø	ø
	21	ø	u	ø	ø	ø	ø	ø	ø	ø	ø
	22	u	u	a	a	a	a	u	a	a	y
	23	a	u	a	a	a	a	a	a	a	a
	24	a	a	a	a	a	a	a	a	a	a
	25	ø	y	ø	ø	y	ø	ø	ø	y	ø

RAW DATA

GROUP:	Grade 3									*
SUBJECT:	21	22	23	24	25	26	27	28	29	30
ITEMS										
1	o	y	y	y	y	y	a	o	o	i
2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
3	a	y	y	u	y	y	a	a	y	y
4	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
5	o	o	o	o	o	o	o	a	o	o
6	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
7	a	a	a	a	a	a	a	a	a	u
8	a	y	y	y	y	y	i	a	y	y
9	ø	ø	ø	ø	ø	ø	ø	ø	ø	u
10	a	a	a	a	o	o	a	a	a	u
11	o	o	o	o	o	o	o	o	o	o
12	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
13	y	y	y	y	y	y	ø	ø	y	y
14	o	o	o	o	y	o	o	o	o	y
15	a	a	a	a	a	a	a	a	a	y
16	a	a	a	ø	a	ø	y	y	y	u
17	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
18	a	a	a	u	a	a	a	a	a	u
19	a	a	a	a	a	u	a	a	a	u
20	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
21	ø	ø	ø	ø	ø	u	ø	ø	ø	y
22	a	a	a	a	a	u	a	a	a	u
23	a	a	a	a	a	u	a	a	a	u
24	a	a	a	a	a	a	a	a	a	a
25	y	ø	ø	ø	y	ø	ø	ø	y	y

*Grade 4

RAW DATA

GROUP:	Grade 4							Grade 5		
SUBJECT:	31	32	33	34	35	36	37	38	39	40
ITEMS										
1	a	y	o	y	o	o	y	o	i	y
2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
3	y	y	y	y	a	y	y	u	y	y
4	a	ø	ø	ø	ø	ø	ø	u	a	a
5	o	o	o	o	o	a	o	o	o	o
6	om	ø	ø	ø	ø	ø	ø	u	a	om
7	a	a	a	a	a	a	a	a	a	a
8	y	y	y	y	y	y	y	u	y	y
9	ø	ø	ø	ø	ø	ø	ø	a	a	a
10	i	a	a	o	a	a	a	u	a	i
11	o	o	o	o	o	o	o	o	o	o
12	ovi	ø	ø	ø	ø	ø	ø	u	a	ovi
13	y	y	y	y	ø	y	y	a	y	y
14	a	y	o	y	o	y	y	a	y	a
15	oju	a	a	a	a	a	a	u	a	oju
16	ø	ø	ø	ø	y	a	a	a	a	ø
17	om	ø	ø	ø	ø	ø	ø	a	ø	om
18	u	u	a	a	a	u	a	y	a	u
19	oju	a	a	a	a	a	a	u	a	oju
20	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
21	ovi	u	ø	ø	ø	ø	ø	u	ø	ovi
22	u	u	a	a	y	a	a	u	a	u
23	i	a	a	a	a	a	a	u	a	i
24	a	a	a	a	a	a	a	a	a	a
25	y	y	ø	y	ø	y	y	u	y	y

RAW DATA

GROUP:	Grade 5					Grade 6				
SUBJECT:	41	42	43	44	45	46	47	48	49	50
ITEMS										
1	0	0	0	y	0	0	a	a	y	0
2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
3	y	a	y	y	a	y	y	y	y	y
4	a	ø	ø	ø	ø	ø	ø	ø	ø	ø
5	a	x	0	0	0	0	0	0	0	a
6	ø	ø	ø	ø	0	om	ø	om	ø	ø
7	a	a	a	a	a	a	a	a	a	a
8	a	a	y	y	a	y	y	y	y	y
9	a	ø	ø	ø	ø	ø	a	ø	ø	ø
10	a	a	a	a	a	a	a	a	a	a
11	u	0	0	0	0	0	0	0	0	a
12	a	ø	ø	ø	ø	ø	ø	ø	a	ø
13	y	ø	y	y	ø	iv	y	y	y	y
14	y	0	y	y	0	0	y	y	y	y
15	a	a	a	oju	a	a	a	oju	a	a
16	a	ø	ø	ø	a	ø	ø	ø	a	ø
17	ø	om	om	ø	ø	om	a	om	ø	ø
18	a	a	a	a	a	a	a	a	a	a
19	a	a	a	y	a	a	oju	i	a	a
20	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
21	ovi	ø	ø	i	ø	ø	a	ø	ø	ø
22	a	a	a	a	u	a	u	u	a	a
23	a	a	a	a	a	a	a	a	a	a
24	a	a	a	a	a	a	a	a	a	a
25	u	ø	y	y	ø	ø	y	y	y	y

RAW DATA

GROUP:		*	Grade 7							Adult	
SUBJECT:		51	52	53	54	55	56	57	58	59	60
ITEMS	1	o	y	y	a	o	y	i	y	a	a
	2	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
	3	y	y	y	y	y	y	y	a	y	y
	4	∅	∅	∅	∅	∅	∅	∅	∅	a	a
	5	o	o	o	o	o	o	a	a	o	o
	6	∅	∅	OM	OM	a	∅	OM	a	OM	OM
	7	a	a	a	a	a	a	a	a	a	a
	8	y	y	y	y	u	y	y	y	y	y
	9	∅	a	a	∅	∅	∅	∅	∅	a	a
	10	a	a	a	i	a	a	i	u	i	i
	11	o	o	o	o	o	o	o	o	o	o
	12	∅	∅	∅	YM	∅	∅	a	ovi	ovi	ovi
	13	y	y	y	y	y	y	y	y	y	y
	14	y	y	y	a	y	y	y	y	a	a
	15	a	a	a	YM	a	a	a	a	oju	oju
	16	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
	17	∅	∅	∅	OM	∅	∅	a	ovi	OM	OM
	18	a	a	a	u	a	a	a	a	u	u
	19	a	i	a	OM	a	a	i	a	oju	oju
	20	∅	∅	∅	∅	∅	∅	∅	∅	∅	∅
	21	∅	∅	∅	a	∅	∅	i	o	ovi	ovi
	22	a	a	a	u	a	a	a	a	u	u
	23	a	a	a	i	oju	a	y	a	i	i
	24	a	a	a	a	a	a	a	a	a	a
	25	y	y	y	y	y	y	y	a	y	y

* Grade 6

RAW DATA

GROUP:	Adult									
SUBJECT:	61	62	63	64	65	66	67	68	69	70
ITEMS										
1	a	a	a	a	a	a	a	a	a	y
2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
3	y	y	y	y	y	y	y	y	y	y
4	a	a	a	a	a	a	a	a	a	a
5	o	o	o	o	o	o	o	o	o	a
6	om	om	om	om	om	om	om	om	om	om
7	a	a	a	a	a	a	a	a	a	a
8	y	y	y	y	y	y	y	y	y	y
9	a	a	a	a	a	a	a	a	a	a
10	i	i	i	i	i	i	i	i	i	a
11	o	o	o	o	o	o	o	o	o	o
12	ovi	ovy	ovi	ovi	ovi	ovy	ovy	ovi	ovi	ø
13	y	y	y	y	y	y	y	y	y	y
14	a	a	y	a	a	a	a	a	a	y
15	oju	oju	oju	oju	oju	om	oju	oju	oju	om
16	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
17	om	om	om	om	om	om	om	om	om	om
18	u	u	u	u	u	u	u	u	u	a
19	oju	oju	oju	oju	oju	om	oju	oju	oju	om
20	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
21	ovi	ovy	ovy	ovy	ovi	ovy	ovy	ovi	ovi	ø
22	u	u	u	u	u	u	u	u	u	a
23	i	i	i	i	i	i	i	i	i	a
24	a	a	a	a	a	a	a	a	a	a
25	y	y	y	y	y	y	y	y	y	w

RAW DATA

GROUP:	Adult									
SUBJECT:	71	72	73	74	75	76	77	78	79	80
ITEMS										
1	o	o	y	i	o	y	o	o	o	y
2	ø	ø	ø	ø	ø	ø	ø	ø	ø	ø
3	y	y	y	y	y	y	i	y	y	i
4	ø	ø	ø	ø	ø	ø	a	a	a	a
5	a	o	o	a	o	a	o	o	o	a
6	ø	ø	om	om	ø	a	om	om	om	om
7	a	a	a	a	a	a	a	a	a	a
8	y	y	y	y	y	y	i	y	y	i
9	ø	ø	ø	ø	a	a	a	a	a	ø
10	a	a	a	o	a	a	i	i	i	i
11	u	o	o	o	o	o	o	o	o	o
12	ø	ø	om	ø	ø	a	a	ovy	ovy	ovy
13	y	y	y	y	y	y	y	y	y	y
14	a	y	y	y	y	y	iv	a	iv	a
15	a	a	om	om	a	a	ov	ov	ov	om
16	ø	ø	x	ø	ø	ø	ø	ø	ø	x
17	ø	ø	om	om	ø	ø	om	om	om	om
18	a	a	a	a	a	a	u	u	u	u
19	oju	a	om	i	a	y	ov	ov	ov	om
20	ø	a	x	ø	ø	ø	ø	ø	ø	ø
21	u	ø	o	ø	ø	ø	ovi	ovy	ovy	ovy
22	a	a	u	a	a	a	u	u	u	u
23	oju	a	a	i	a	a	i	i	i	i
24	a	a	a	a	a	a	a	a	a	a
25	i	ø	y	y	y	y	iv	i	y	y

RAW DATA

GROUP:		Adult									
SUBJECT:		81	82	83	84	85	86	87	88	89	
ITEMS	1	o	o	y	o	iv	o	o	a	a	
	2	ø	ø	ø	ø	ø	ø	ø	ø	ø	
	3	y	y	y	y	ø	y	i	y	y	
	4	ø	a	a	a	a	ø	a	a	a	
	5	o	o	o	o	o	o	o	o	o	
	6	om	om	om	om	om	om	om	om	om	
	7	a	a	a	a	a	a	a	a	a	
	8	y	y	y	y	iv	y	y	y	y	
	9	ø	a	a	a	a	a	a	a	a	
	10	i	i	i	i	i	i	i	i	i	
	11	o	o	o	o	o	o	o	o	o	
	12	ovy	ovy	ovy	ovy	ovy	a	om	ovi	ovy	
	13	y	y	y	y	y	y	i	y	y	
	14	y	a	a	a	a	a	a	a	a	
	15	om	oju	ov	om	ov	om	oju	oju	ov	
	16	ø	ø	ø	ø	ø	ø	ø	ø	ø	
	17	om	om	om	om	om	om	om	om	om	
	18	u	u	u	u	u	u	u	u	u	
	19	om	oju	ov	om	oju	om	oju	oju	oju	
	20	ø	ø	ø	ø	ø	ø	ø	ø	ø	
	21	ovy	ovy	ovy	ovy	ovi	ovi	ovi	ovi	ovy	
	22	u	u	u	u	u	u	u	u	u	
	23	i	i	i	i	i	i	i	i	i	
	24	a	a	a	a	a	a	a	a	a	
	25	y	y	y	y	y	y	i	y	y	

RAW DATA